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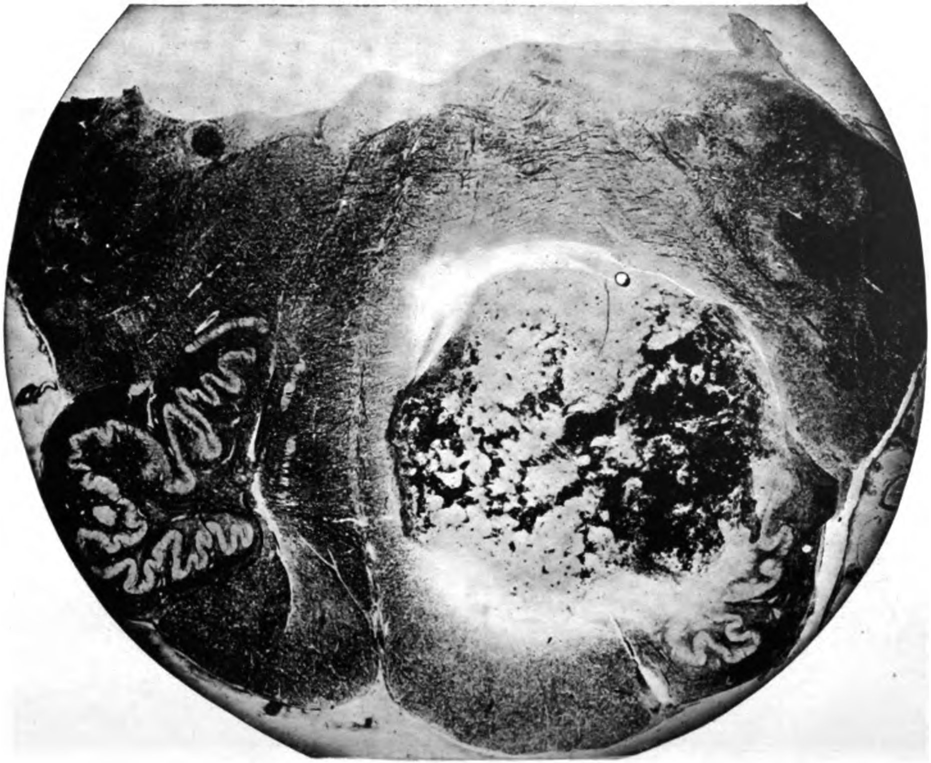

To illustrate the Paper by Drs. Monro and Findlay.]

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ORIGINAL ARTICLES.

NOTE ON THE COURSE OF THE CEREBELLO-OLIVARY FIBRES, AS DEMONSTRATED IN A CASE OF TUBERCULOSIS OF THE SPINAL CORD AND MEDULLA.[1]

By T. K. MONRO, M.A., M.D.,
Physician to the Glasgow Royal Infirmary and Professor of Medicine in St. Mungo's College;

AND

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Extra Dispensary Physician, Royal Hospital for Sick Children; Extra Dispensary Physician, Western Infirmary, Glasgow; Assistant to Professor of Pathology, Glasgow University.

Alex. C., aged 22 years, labourer, was admitted to the Glasgow Royal Infirmary on 26th April, 1905. After being out of sorts for ten days, patient took to bed on the 20th, suffering from vomiting and from pains all over, but particularly in the head and back. He had no cough or shortness of breath. He began to wander in his mind at night on the 23rd, but consciousness was not completely lost till the 25th, when he became delirious and difficult to control. The bowels were constipated. No clear light was thrown on the nature of his illness by his personal or family history.

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[1] Communication made, and specimens shown, to the Glasgow Medico-Chirurgical Society on 1st May, 1908.

On admission, patient, though not fully conscious, objected to being moved. The legs were kept partly flexed, but could be straightened. No abnormality was found in the chest or abdomen. The pupils were large, and reacted to light; the left was, if anything, larger than the right. The white blood corpuscles numbered 17,812 per cm.

On 2nd May, 1905, it was noted that the left side of the face was paralysed. The left eyeball was rotated outwards, and apparently fixed. The pupils were dilated, and quite insensitive to light; the left was rather larger than the right. Tache cérébrale was well marked. The legs were flaccid and motionless; the arms were moved a little from time to time. Pinpricks in the arms and legs excited no response. The knee-jerks and plantar reflexes were absent. Kernig's sign was present. The diaphragm seemed to be paralysed; it descended during expiration instead of during inspiration. Dulness was noted on percussion over the right lower lobe. Patient died the same day (2nd May, 1905).

Summary of post-mortem (4th. May, 1905).—Caseation of mediastinal glands. One gland adherent to left upper lobe, with consequent invasion of lung. Another focus of caseation in same lobe. Nodules like tubercles in spleen and its capsule, and in neighbouring part of peritoneum. Exudation in interpeduncular space. Walls of Sylvian fissure glued. Small nodules seen. Ventricles distended with clear fluid. Heart and intestines normal. Mesenteric glands not much affected.

A minute examination of the cerebro-spinal axis was carried out at the levels of the pons, medulla, third and sixth cervical, fourth, seventh, and tenth dorsal, first and fourth lumbar, and second sacral segments.

The pons presented no abnormality.

The medulla shows some bulging of the left side, especially above and in the region of the olivary body. Section reveals the presence of a tuberculous nodule, which has evidently originated between the arms of the olivary nucleus, and has in great measure destroyed that body. In the upper part of the medulla, where the mass measures 0·75 cm. in diameter, there is towards its external aspect merely a trace of the olivary nucleus left (see Plate). At this level there is degeneration of all the tracts in the immediate periphery of the nodule, the fillet and posterior basis bundle suffering most severely, but there is, in addition, unequivocal, though slight, degeneration of the pyramidal bundle. The restiform body and the cerebello-olivary fibres on the same side are also somewhat degenerate. On the opposite side there is a very slight degree of degeneration of the restiform body, but the cerebello-olivary fibres are quite normal in appearance. There is, however, on this (right) side distinct degeneration of the cerebello-olivary fibres in the upper part of the hilum of the olivary nucleus. At the level of the eighth nerve the same degenerative changes are visible; only, however, to a much less extent. Though at this level there is no tuberculous infection, the left half of the medulla is bulkier than the right, and the arms of the olivary nucleus are more widely separated than is normal. There are slight but distinct degenerative changes in the fillet, cerebello-olivary fibres, and pyramidal bundle on the same side. There is, however, no lesion of either restiform body at this level. At the level of the decussation of the pyramids there is extensive degeneration of the fasciculus gracilis on either side; also in the direct cerebellar tract, and to a very slight extent in the crossed pyramidal tract on either side.

The spinal meninges are the seat of a diffuse tuberculous infection, most marked, however, below the level of the fourth dorsal segment. Above this, the anterior and posterior roots are quite healthy, while inferiorly these structures are more or less degenerate, and are more severely affected as the sacral region is approached.

Throughout the whole cervical and dorsal regions of the cord, ascending degeneration of the posterior columns, cerebellar and antero-lateral ascending tracts, is demonstrable by both Marchi's and Weigert's methods of staining. At the level of the first lumbar segment, the cord is exceedingly degenerate, there remaining only a mere fringe of healthy myelinated fibres in the anterior commissure and around both anterior cornua. Here the white matter shows much infiltration with round cells and a slight degree of sclerosis. The motor cells in both anterior cornua are few in number, and many that persist show marked chromatolysis. In the fourth lumbar segment the whole of the left half of the cord, excepting a small portion of the posterior column, is occupied by a tuberculous nodule, which has displaced and distorted the cornua on the right side. The second sacral segment is more or less softened, and presents an extreme degree of degeneration throughout.

Here, then, we find a general tuberculous spinal meningitis with, in the lower half of the cord, considerable degeneration of both the motor and sensory roots. In the left olivary body and in the fourth lumbar segment are situated definite tuberculous masses, the one in the latter region having, along with the meningitis, caused an extensive ascending degeneration, and the one in the olivary body a slight and localised descending degeneration.

The chief interest of the focus in the medulla, however, lies not in the affection of the pyramidal bundles, but in the manner in which the cerebello-olivary fibres have been affected. Regarding the course which these fibres follow opinions differ. Some authors hold that they are entirely efferent in type; some, again, maintain that they are entirely afferent; while others say that both afferent and efferent fibres enter into the formation of this bundle. Santee[1] considers that these fibres are descending in direction, while Klimoff[2] holds the opposite opinion. It is just in such cases as the present, where there has been a localised destruction of the olivary nucleus, that one should expect to get some help towards the elucidation of this debated question. As previously mentioned, the left olivary nucleus was in great part destroyed, as also the inferior portion of the cerebello-olivary bundle, but the right restiform body, with which these are associated, was almost entirely healthy, there being only a very slight amount of degeneration. Further, owing to disease of the cerebello-olivary fibres in the vicinity of the left restiform body, these were distinctly diminished in number in the hilum of the right olivary body. These different points demonstrate that the majority at least of the fibres in this bundle are descending, though there is at the same time some evidence to show that a few are ascending in type.

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[1] Santee, *Anatomy of Brain and Spinal Cord* (London: Appleton), 1908, p. 265.

[2] Cunningham's *Text-Book of Anatomy* (London and Edinburgh: Pentland), 1902, p. 460.

A CASE OF HYPERTROPHIC STENOSIS OF THE PYLORUS IN AN INFANT 8 WEEKS OLD.[1]

By WALTER K. HUNTER, M.D., D.Sc.,

Physician to the Royal Infirmary, and Extra Physician to the Royal Hospital for Sick Children, Glasgow.

This case would seem to be of interest not only as supplying us with an anatomical specimen of hypertrophic stenosis of the pylorus, but also on account of the difficulty in diagnosing the condition during life, for the symptoms were not altogether typical of those commonly met with in a narrowing of the pyloric orifice.

The history of the case is as follows:—

Jas. H., aged 8 weeks, was a healthy and well-nourished baby at birth; and for the first four weeks thereafter he took his milk well, never vomited, and seemed to be in every way a normal child. When 1 month old, however, and without obvious reason, vomiting set in, and continued up till the time of the child's admission to hospital. Most often the milk was vomited immediately after it was taken, but occasionally it would be retained for five or ten minutes, and less often for twenty minutes to half an hour. Change in the diet seemed to make little difference as regards the vomiting, for milk diluted many times was as readily vomited as a meal of milk less dilute. Even when given in such small amount as two teaspoonfuls at a time the vomiting still continued. Allen & Hanbury's food was also tried, but with no better result, and carbonate of bismuth and grey powder had been given with apparently no benefit.

There had been neither diarrhœa nor constipation, and the bowels moved regularly every day, though the motions were very small in amount and were often green in colour. The child had been getting progressively thinner since the vomiting set in.

When admitted to hospital on 7th February the emaciation was extreme, the eyes were sunken, the cheeks hollow, and the abdomen retracted. The weight at this time was 6¾ lb. The heart and lungs seemed healthy, and neither liver nor spleen was enlarged. The lower border of the stomach seemed to be about the level of the umbilicus, and a little to the right and above the umbilicus some thickening was to be made out on palpation, suggestive of a small pyloric tumour.

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[1] A communication made to the Medico-Chirurgical Society of Glasgow on Friday, 3rd April, 1908.

For the first twenty hours after admission the child was fed on 1 oz. of peptonised milk every two hours. But each of these meals was vomited, some at once, and none was retained longer than twenty-five minutes. Usually the most of the milk taken at the last meal was returned with the vomiting. The milk most often was simply regurgitated, and was never ejected with any considerable force. No peristaltic movements were noted though carefully looked for. The stomach was washed out on three different occasions during the first twenty hours of treatment, but beyond some clear mucus and peptonised milk there was nothing special to note in the washings. The bowels were moved twice on the afternoon of admission, and three times the next day. The motions on each occasion were small in amount and dark brown in colour.

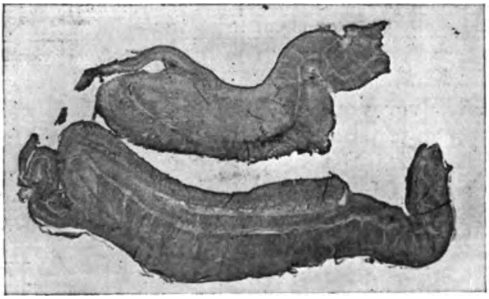

Fig. 1.

Longitudinal section through hypertrophied pylorus. Stomach end to the right, duodenum at the left.

On 9th February the peptonised milk was stopped, and raw meat juice and albumen water substituted. Three teaspoonfuls of each were given alternately every hour and a half, and 2 oz. of normal saline solution were injected per rectum every four hours so as to make up the lack of fluid given by the mouth. With this change of diet the vomiting ceased, and the child showed definite signs of improvement. On 12th February the albumen water was replaced by diluted condensed milk (half an ounce at a time) so as to supply some of the carbohydrates wanting in the former diet. This was also retained. But at 4 A.M. on 14th February the child was found by the night nurse in a state of collapse, and, in spite of stimulants, he died five hours later. The exact cause of death could not be determined, as there had been no vomiting for nearly five days, and the improvement in the appearance of the child in that time was quite noticeable.

The *post-mortem*, which was made by Dr. M. B. Hannay, showed the body to be that of a small but fairly well-developed baby, though greatly emaciated. There was scarce any subcutaneous fat. The internal organs, otherwise than the stomach, seemed free from disease, The stomach was distinctly dilated, but not to any very great extent. It measured, from the end of the pylorus to the left border of the stomach, 3½ inches, and between the two curvatures the maximum diameter was 1¾ inches. It contained about 1 oz. of clear mucus. The mucous membrane had evidently been stretched, for there were only a few rugæ, and these were very small. The muscle coat of the stomach was considerably thickened. The pylorus was represented by a little tumous mass, which to look at and to the touch was as if some foreign body, like the terminal phalanx of one's little finger, had been inserted into the lumen of the pylorus. This hypertrophied sphincter (Fig. 1) measured nearly 1 inch in length and 2 inches in its external circumference. Its lumen was central, and admitted readily a large probe, but slight pressure was required to pass a No. 10 metal catheter. The mucous membrane lining the

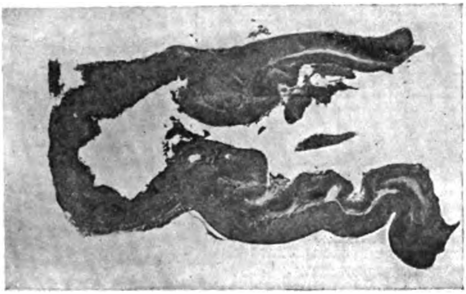

FIG. 2.

Longitudinal section through pylorus of child, 1 year old (comparison with Fig. 1). Stomach end to the right, duodenum at the left.

lumen of the pylorus was thrown into longitudinal folds. Sections, both longitudinal (Fig. 1) and transverse (Fig. 3), were made at the pylorus; and for comparison similar sections (Figs. 2 and 3) were cut through the pylorus of a child, aged 1 year, greatly emaciated, who had died of a general tuberculosis. This child weighed at the time of death only 10½ lb. In the hypertrophied pylorus the length was—upper lip, 15 mm.; lower lip, 18 mm.; normal pylorus, either lip, 6 mm. The thickness of the muscle in the latter was 3 mm., in the former, 4 mm. The lumens in the two cases seemed of about the same diameter.

On microscopic examination, both circular and longitudinal muscle coats in the hypertrophic specimen were thickened, but they maintained something of the normal relationship to one another as regards thickness. There was no appearance of scar tissue or of increase otherwise in the connective tissue elements of the section.

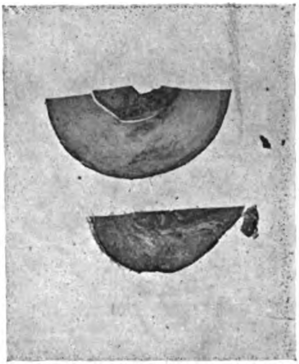

Fig. 3.

Upper.—Transverse section through pyloric wall in the hypertrophic pylorus.
Lower.—Transverse section through pyloric wall of normal stomach.

Remarks.—Hypertrophic stenosis of the pylorus in infants is a condition to which a good deal of attention has been paid during the past twenty years by physicians as well as surgeons. During that time some 140 cases have been put on record, so that the symptomatology and pathological anatomy of the disease are now fairly well defined. In the typical case the child is quite healthy at birth, and remains so for one or two weeks. Then vomiting, which is most often the first symptom, comes on, usually in the second or third week of life. Of 37 cases seen at Great Ormond Street Hospital[1] during a period of ten years, vomiting came on in 3 cases at the end of one week, in 9 cases at the end of two weeks, in 11 cases at three weeks, in 5 cases at four weeks, in 2 cases at six weeks, and in 1 case at eight weeks. In only 4 of this series was vomiting present at birth. To begin with, vomiting does not occur after every meal, and when it does come on the quantity vomited is often equal in amount to several meals, and usually it is brought up with so much force as to project the stomach contents some distance from the child. Later on the vomiting becomes more frequent, till ultimately the stomach seems so irritable that it refuses to retain even the smallest quantities of milk. There is evidently pain with the vomiting; and frequently visible peristalsis, most often from left to right, is to be seen. There is almost never bile in the vomit, and the tongue remains clean throughout.

On examination of the abdomen, the stomach may be made out to be considerably distended, and the hypertrophied pylorus in the most of the cases will be palpable as a little hard mass, about the size of an almond, lying above and to the right of the umbilicus. With the vomiting there is almost always constipation; but this depends on the degree of stenosis, and, therefore, on the amount of food getting into the bowel. There may even be diarrhœa due to products of indigestion passing into the duodenum.

Emaciation and progressive loss of weight are constant signs.

At the *post-mortem* examination the stomach is found enlarged to a greater or less extent, and most often its muscle coat is hypertrophied. The pylorus, too, is thickened, and very much longer (usually 1 inch long) than normal. The thickest part is usually at the duodenum, thinning towards the stomach end. Stenosis is almost never complete, and in the vast majority of cases a No. 8-10 metal catheter can be passed through the pylorus; but the mucous membrane lining its lumen is often found thrown into longitudinal folds, and this is, doubtless, a cause of a certain amount of obstruction. On microscopic examination, the abnormal thickness of the pylorus is seen to be due chiefly to increase of the circular muscle fibres, though at times the longitudinal fibres also show hypertrophy.

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[1] Voelcker, *Transactions of the Clinical Society of London*, 1907, vol. xl, p. 178.

As to the etiology of the condition, there is a considerable difference of opinion. By some the thickened pylorus is regarded as a congenital malformation, while others maintain that it is a hypertrophy secondary to over-action of what was originally a normal pylorus. The fact that the symptoms rarely appear till some weeks after birth is rather against the the congenital lesion, though it may be that while the smaller meals of earliest infancy can be passed through the stenosis, this cannot be accomplished with the larger meals appropriate to the third and fourth week of life.

But it is also difficult to understand how spasm extending over two or three weeks' time could produce a hypertrophy of the pylorus such as is met with in these cases, unless it be that the spasm has also been present during the later intra-uterine life, for there are probably substances passing along the alimentary tract even at that early period. However, whether the hypertrophy of the pylorus be congenital or acquired, or sometimes one and sometimes the other, there seems little doubt that abnormal spasm of the sphincter must play an important part in the production of the symptoms. Possibly the pylorus is so strong that it does its work too thoroughly; or it may be that perverted gastric secretion, or the products of indigestion, causes reflex spasm without adequate relaxation, and so leads to the difficulty of emptying the stomach. Still, if the spasm depended on some fault of digestion, one would expect to find symptoms of stenosis of the pylorus much more frequently in children artificially fed rather than in those on the breast. But this is not the case, for it has been shown that over 55 per cent of the cases were breast-fed. Nevertheless, spasm of the pylorus is probably an important factor in the production of the obstruction, for the amount of narrowing seen *post-mortem* in these cases scarcely seems sufficient in itself to determine vomiting and other obstructive symptoms.

The uncertainty as to the causation of hypertrophic stenosis of the pylorus has its influence on treatment, and at the present moment there is considerable difference of opinion as to how this stenosis can best be overcome. Up till recently some form of surgical operation was regarded as almost essential if the child were to have a chance of living; but within the past two or three years a certain number of cases cured by medical treatment have been put on record, and these have made one question the necessity for operation as a routine practice in every case. Even the surgeons themselves recognise this, as, for example, Mr. Burghard,[1] who has operated on 16 cases, with a mortality of only 31·25 per cent. He says, "I have no doubt that many of these cases can be cured without recourse to surgery, and I cannot help thinking that the number will increase as knowledge of the disease extends and the practitioner recognises it and employs appropriate treatment as soon as it arises."

The medical treatment is based on the view that the obstruction is chiefly due to spasm of the pylorus, and that as a result the stomach is dilated and its mucous membrane in an unduly irritable condition. The aim of the treatment, therefore, is to remove any source of irritation from the stomach such as would set up and maintain this spasm. Washing out the stomach, then, and feeding with small meals of easily-digested substances is the line of treatment to be pursued. The stomach may be washed out once or twice a day; and peptonised milk, albumen water, and raw meat-juice are the sorts of food most easily tolerated. It has been recommended to give small doses of opium once or twice daily with a view to lessen the spasm, but it is doubtful if this does any good.

It is extremely difficult to estimate with any degree of accuracy the results of the medical treatment of stenosis of the pylorus, as the cases treated are still but few in number. In the past year Dr. Sutherland[2] has had two and Dr. Carpenter[3] one succesful case. On the other hand, Dr. Voelcker[4] has treated 7 cases, with only 2 recoveries. Of the 5 cases that died, 1 died after fifteen days' treatment, 3 after four weeks' treatment, and 1 after eight weeks' treatment. No definite conclusions can be drawn from such figures, but they, at least, indicate that even with medical treatment the death-rate from hypertrophic stenosis of the pylorus is likely to be considerable, perhaps as considerable as with surgical treatment. Fish[5] gives a list of 71 cases operated on, with a mortality of 46·47 per cent, though certain individual operators have a much better percentage of recoveries. It remains to be seen if medical treatment cannot improve on this. In the meantime, it seems reasonable that every case should first be treated, for some days at least, by washing of the stomach and careful dieting, before surgical operation, which is always a serious one, is thought of. With the case I have just recorded the mother refused to permit an operation, so that there was no alternative but the medical treatment, which was successful, as far, at least, as stopping the vomiting and improving the general condition of the child.

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[1] Burghard, *Ibid.*, p. 122.

[2] Sutherland, *Ibid.*, p. 98.

[3] Carpenter, *Lancet*, 14th March, 1908.

[4] Voelcker, *Ibid.*

[5] Fish, *Annals of Surgery*, July to December, 1906, vol. xliv, p. 9.

In conclusion, I wish to express my indebtedness to Dr. M. B. Hannay for the trouble she has been at to cut sections of the pylorus in this case, and for the photographs of these that she has so kindly prepared.

AN UNUSUAL FORM OF MEDIASTINAL TUMOUR.[1]

BY WILLIAM MACLENNAN, M.B.,

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THE case of mediastinal tumour which is the subject of this paper seems to me to be worth recording, as it presents certain features that make it one of rare occurrence.

A young woman of 28 years of age was recently admitted to a surgical ward in the Western Infirmary, Glasgow, to undergo operation for an abscess at the root of the neck. As the symptoms and signs which she presented on admission were not alone open to this interpretation, I was asked to see her, and, after examination, formed the opinion that she was suffering from an intrathoracic tumour. She was then transferred to the medical department.

Her chief complaints were of headache, breathlessness, and pain over the right shoulder of about six weeks' duration. These symptoms correlated themselves in the patient's mind to her confinement, which had taken place exactly six weeks before her admission to hospital. Indeed, it was not quite clear that at least some of the pain she complained of might not be referred to the condition of her breasts, which were, from the sudden cessation of nursing, congested, knotted, and tender.

She was a well-developed woman, and her appearance was not suggestive of ill-health. Her antecedent medical history, with the exception of one notable circumstance, presented nothing which threw any light on her present symptoms. When a girl of 15, she was an inmate of the Western Infirmary, for treatment for a "swelling" in front of the neck. This tumour was removed, and she left the hospital well. This event must be specially noticed as having, in all probability, a closer connection with the present illness than at first sight, from its remote date, might appear. The scar of the incision for the removal of the tumour was still distinct, and occupied the middle line of the neck just over the isthmus of the thyroid gland.

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[1] A communication made to the Medico-Chirurgical Society of Glasgow on 21st February, 1908.

A striking enough clinical picture this patient presented. Her breathing was noisy and harsh—almost approximating to the "stertorous." Her face was congested and a little livid, and perhaps somewhat swelled under the eyes. She had difficulty in lying down, and preferred the decubitus of "orthopnœa," with the arms well extended in front of her—a position so characteristic of intrathoracic tumour. From time to time she had a spasm of coughing, accompanied by a moist, rasping sound, as of air passing through tough mucus that was with difficulty expectorated. Her cough was typical of tracheal pressure—coming on in paroxysms and being "croupy" in character.

On examination she presented the following symptoms and signs mostly referable to intrathoracic pressure.

Although the diagnosis of abscess had been made before she came to hospital, the pressure signs present might with equal justice have been ascribed to aneurysm or tumour. The puffy and cyanosed face indicated some interference with the venous return. On both sides of the chest, over the mammary regions, the superficial veins were dilated. After the breasts were treated and had ceased to secrete, the veins remained as prominent as ever and distinctly tortuous. The conditions almost always accompanying pus formation were entirely absent. The temperature rarely went above 100° F., and rigors and sweating were never observed. There was no material increase in the leucocytes over several differential counts.

Over the right supraclavicular region and the manubrium sterni there was a distinct fulness which was very tender to pressure. Over the centre of this area the percussion note was absolutely dull and the resistance sense greatly increased. Extending for about 4 inches downwards from the suprasternal notch, and for three-quarters of an inch to the left and an inch and a half to the right of the middle line, the dull area passed backwards over the shoulder and occupied the right suprascapular region. Bubbling and sibilant râles were heard practically over the whole chest accompanying both portions of the respiratory murmur. The breath sounds were defective over the dull area, and were of the "tubular" variety. Vocal fremitus and resonance were diminished over the whole right lung, obviously owing to the presence of fluid. The right pulse was distinctly weaker than the left, and this evidence of pressure on the vessels was soon confirmed by the development of a progressively increasing œdema beginning at the hand and ultimately involving the whole right arm. The pupils were equal and normal in their reactions throughout the entire illness. The laryngeal examination showed the vocal cords to move fairly freely, but they did not open widely during deep inspiration, but rather more so during the expiratory act—indicating slight paresis of both recurrent laryngeals. Nine days after the patient's admission the right kidney became palpable and tender, and the urine, which hitherto had been normal,

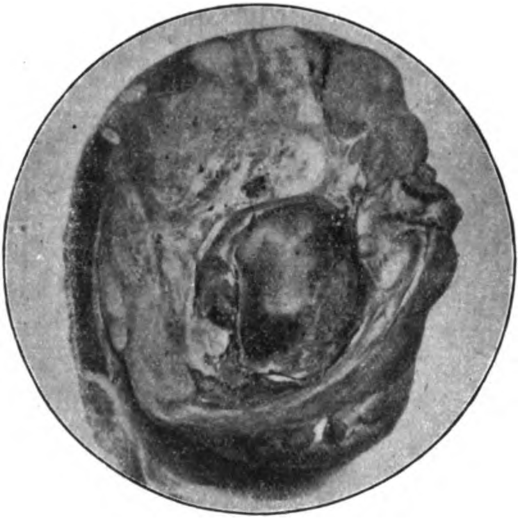

FIG. 1.

General view—right half of tumour.

showed distinct traces of albumen. The liver also gradually increased in size, especially the left lobe, where tenderness was elicited on pressure.

The differential diagnosis between the possible conditions was thus easily enough made.

Mediastinal abscess is a very rare condition, and usually results from traumatism. It is, therefore, relatively more common in men than in women. A collection of pus in the mediastinum gives rise to a series of constitutional symptoms that are easily recognised as differing from those of aneurysm or tumour.

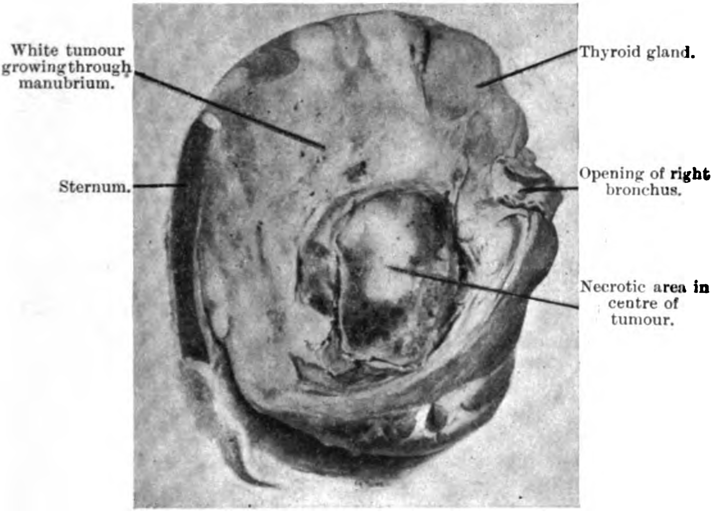
White tumour growing through manubrium.
Thyroid gland.
Sternum.
Opening of right bronchus.
Necrotic area in centre of tumour.

FIG. 2.
Anatomical relations of Fig. 1.

Aneurysm of the first part of the aortic arch could in this case likewise be excluded. There was no distensile pulsation, no diastolic shock, no cardiac murmur. The heart, although latterly, owing to the growth of the tumour, somewhat displaced, was normal. There was no evidence of any vascular disease.

The diagnosis of tumour was therefore made. Its situation made it probable that it arose from the anterior mediastinum, and had its origin in the thyroid gland or in the remnants of the thymus. The age of the patient, the rapid development of the growth, and the widely distributed secondary lesions made it almost certain that it was a sarcoma.

The tumour rapidly extended in area, and produced a pronounced bulging in the upper part of the chest, accompanied by an accentuation of all the pressure signs. Emaciation became extreme, and the subfebrile movement noticed at the date of admission became a more pronounced feature of the case. The frequent occurrence of a varying degree of fever during the course of a rapidly-growing malignant tumour is not sufficienty recognised. If the absence of pyrexia be regarded as typical during the course and development of malignant growths, the practitioner is apt to be led into the wrong track and make an error in diagnosis. It was the presence of fever at the time of this patient's admission that, doubtless, contributed to the initial error in diagnosis.

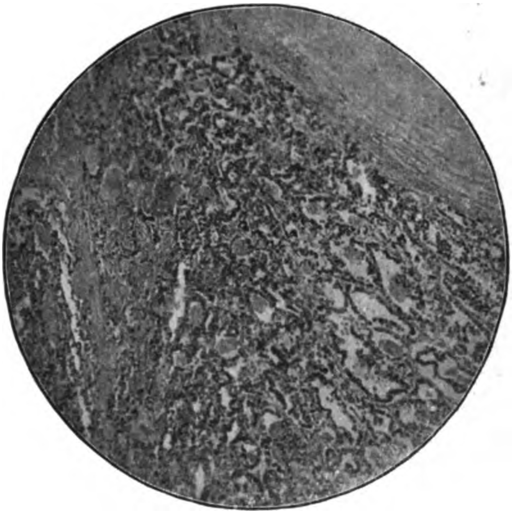

FIG. 3.

General adeno-carcinoma of thyroid—perforating trachea at right upper segment.

Partly from exhaustion, loss of sleep, difficulty in swallowing, and from a slow form of asphyxia, the patient died after an illness of exactly ten weeks' duration.

At the *post-mortem* examination, conducted by Dr. Teacher, the diagnosis was confirmed, and the points of interest, extracted from the report, may be thus summarised:—

There was an obvious bulging in the region of the manubrium sterni and a hard swelling at the root of the neck, more especially on the right side. On incision, the tumour mass was seen to consist of a white and brown tissue. The white tumour was seen projecting through the manubrium sterni. The clavicles were sawn across and the whole tumour removed *en masse.* It was somewhat spherical in shape, and fully 8 inches in diameter; it occupied the whole middle and upper parts of the thorax, the lungs being pushed to the side and the heart downwards, and the trachea and œsophagus to the left and backwards. The heart and pericardium presented normal characters. The lungs contained secondary growths. The upper lobe of the right was very much infiltrated with tumour tissue. Otherwise the lungs were not involved in the tumour. The trachea and bronchi were somewhat flattened, but were not infiltrated by the white tumour. The large arteries and œsophagus were also free. There was no

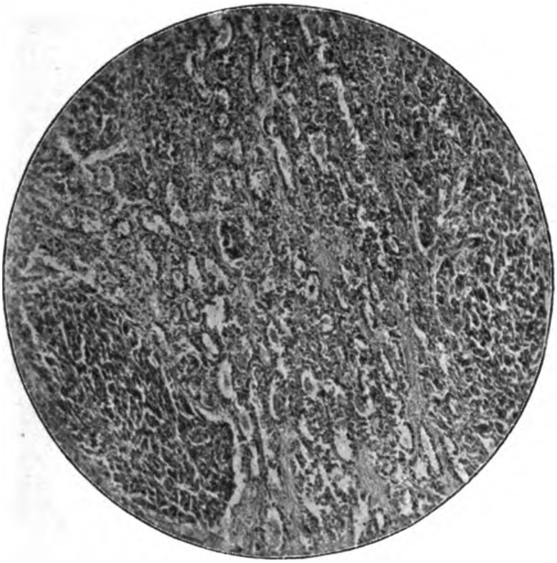

FIG. 4.

Thyroid—with processes of sarcoma at right and left.

thrombosis in the veins, but they were compressed and flat. The left recurrent laryngeal was stretched but not infiltrated. The right pleura contained about 40 oz. of clear serous fluid, and its walls were widely sown with small secondary growths. There was a large brown organ in front of the trachea—partly embedded in the tumour—which turned out to be the right lobe of the thyroid, and seemed independent of the tumour above but was infiltrated by it below. The left lobe of the thyroid was also of light brown colour, and was the seat of hæmorrhage, but it was not enlarged. The lymphatic glands in the neck were infiltrated with the brown tumour, but the mass in the neck was mainly an extension of the primary white growth. The manibrium sterni was to a considerable extent replaced by the tumour composed of white tissue. The liver contained large secondary growths. The spleen was normal. The kidneys contained numerous small tumours. Both suprarenals were the seats of tumour; that in the right was as large as a walnut, soft, white, and necrotic in the centre. The mesenteric glands were enlarged—in part, at least, by tumour—so far as naked-eye appearance went. The uterus, appendages, and bladder were normal.

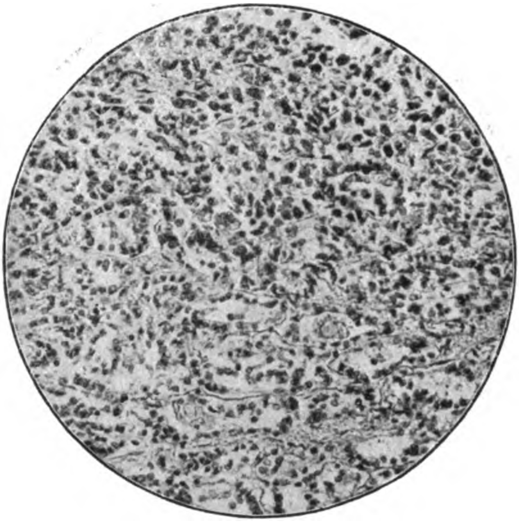

Fig. 5.

Sarcoma (above) and adeno-carcinoma (below) from lymphatic gland.

This double tumour was for the most part white, lobulated, sharply defined, and circumscribed, but it infiltrated the lung tissue and pleura. There were small nodules of the brown tumour projecting into the trachea high up.

The points of special interest in this case were:—

1. The probable etiology of the disease.
2. The double character of the tumour.
3. The nature of the metastatic growths.

The etiology.—There are on record quite a number of aberrant or accessory thyroid glands becoming the seat of malignant disease and producing mediastinal tumours. Such adenomatous tissues are apt to become malignant even in early life, and it would seem not improbable that the growth removed in girlhood may have been an adenoma. Or, was the tumour removed an accessory thyroid or a piece of embryonic tissue left inside or close to the gland? In the absence of any histological examination of the growth at the time of its removal one can only speculate on the *rôle* it played as an etiological factor in this case.

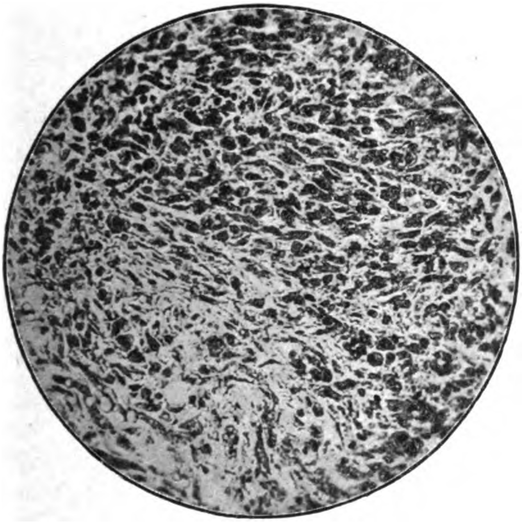

FIG. 6.
Liver—metastatic sarcoma.

The double character of the tumour.—The greater part of the bulk of this tumour was composed of sarcoma, and a smaller portion consisted of adeno-carcinoma. Such double tumours are not common in any tissue, but are of exceptionally rare occurrence in the thyroid gland. Of 520 cases of mediastinal diseases analysed by Hare, by far the larger proportion was composed of cancerous tumours. Sarcoma is, however, more frequently primary than carcinoma. Probably in this case we have had the adeno-carcinomina primary, and, acting as a chronic irritant, producing, as is usually the case in such double tumours, a much more actively growing sarcoma, which ultimately masked and dominated the primary growth.

In the *Lancet* of August, 1899, Firth states that in an analysis by Roger Williams of 7,294 cancers, only 7 originated in the thyroid, and of 1,260 sarcomas only 1 was primary to the thyroid gland.

The metastatic tumours.—While the history of the removal of a tumour in earlier life makes it more than probable that the primary growth was in this case an adeno-carcinoma, no cancerous elements were found in the metastatic tumours, with the exception of the neighbouring lymphatic glands. All the secondary tumours found were entirely composed of sarcomatous tissue, revealing the greater malignancy and tendency to disseminate of such sarcomatous growths.

CASE OF INTRACYSTIC PAPILLOMA OF AN ACCESSORY THYROID.[1]

By A. MacLENNAN, M.B., C.M.,
Surgeon to Out-patient Department, Western Infirmary, Glasgow;

AND

JOHN SHAW DUNN, M.A., M.B., Ch.B.,
Late House Surgeon, Western Infirmary, Glasgow.

A. D., æt. 28, was seen at the Western Infirmary in 1907. She then complained of a growth in the neck of four years' duration. The size, shape, and situation of the growth are shown in the accompanying illustration (Fig. 1). The tumour was painless. It was semicystic, slightly tense, smooth, and was not attached to the skin. It did not move with deglutition. The consistence was not uniform, but the tumour was not distinctly lobulated. There was no infiltration in its neighbourhood; the mass was attached deeply in the neck, behind and beneath the sterno-mastoid.

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[1] Read at a meeting of the Glasgow Medico-Chirurgical Society held on 21st February, 1908.

On these grounds a diagnosis was reached of epithelial cystic tumour, benign in nature. This included accessory thyroid tumours, branchiogenetic cyst, and dermoid. Swellings in the neck to be differentiated from these were:—

1. Fatty tumour. The growth was too cystic and spherical to be a fatty tumour; it was not lobulated.

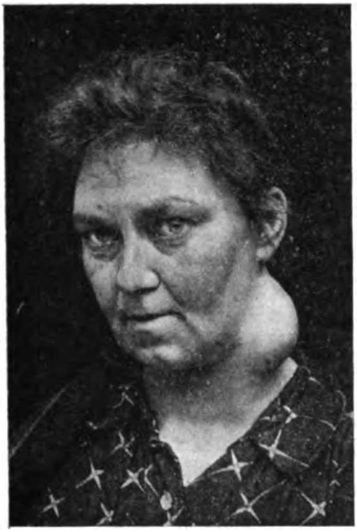

FIG. 1.

2. Sebaceous cyst. The growth was not adherent to the skin, and had not the physical characters of a cyst containing fatty matter. There was no history of rupture, nor was there any visible opening. The tumour was rather large for a sebaceous cyst. There was no surrounding inflammatory exudate.

3. Hygroma. The situation, the small size, the attachment to the skin, and the physical characters typical of hygroma were sufficiently distinctive to differentiate such from this swelling.

The differentiation of the epithelial tumours from each other is one of difficulty, but a dermoid might have been eliminated by exploratory puncture with the needle.

The operation presented no special difficulty. The tumour was embedded in loose cellular tissue beneath the sterno-mastoid. The wound healed by first intention, but the case has since been lost sight of.

Pathological appearances.—The tumour is enclosed in a fibrous capsule, about one-twelfth of an inch in thickness. This is ruptured at one point, and the gap leads into a cavity containing some thick fluid like altered blood. The tumour tissue on section is pale purplish-brown, and friable. A few gritty granules of calcification are seen on the cut surface.

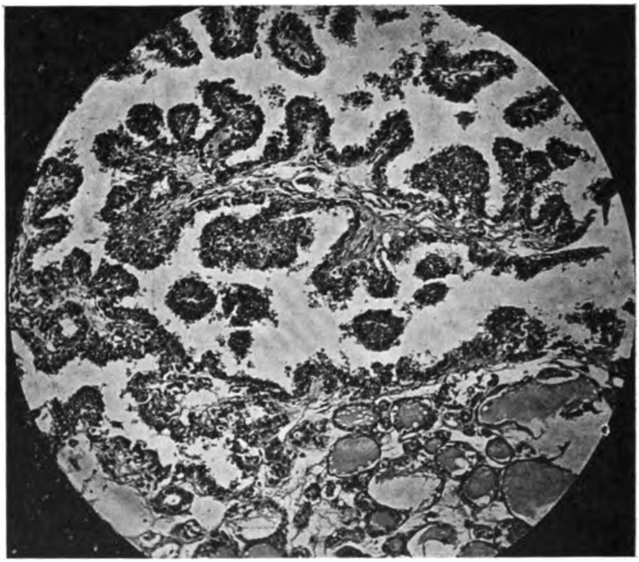

FIG. 2.

Sections show the tissue to be composed chiefly of branching villi closely packed together. These villi have a core of connective tissue invested by one or two layers of cubical or columnar epithelium. The central stroma in most of them is vascular, but in others the blood-vessels are scanty, and the fibrous tissue has undergone marked mucoid degeneration, causing great swelling of the villi. Calcification has occurred in some villi where the degeneration is very marked. The villi take origin from the fibrous capsule, and from broad septa of loose fibrous tissue projecting from it. In these septa occur numerous adenomatous spaces lined by cubical epithelium, and some of these spaces contain colloid material. In one part of the section a large number of these colloid-containing acini are seen, packed closely together; this area has an appearance remarkably like thyroid tissue (Fig. 2). The epithelial elements are very abundant, but show no tendency to transgress the limits of the connective tissue. The histological appearances point to the tumour being of the nature of an intracystic papilloma of simple character. The occurrence of the numerous typical thyroid elements suggests the origination of the tumour from aberrant thyroid tissue.

Such aberrant masses are of fairly frequent occurrence, and have a wide area of distribution in the neck.[1] Under the designation, "Intracystic Papilloma of Accessory Thyroid Gland," a tumour in the anterior triangle of the neck, similar to the above, has been described by Pollard.[2] His description of the histological appearances corresponds in every detail with that in our own case. He concludes that the tumour was primarily cystic, and derived from an accessory thyroid gland, and that the cysts were secondarily filled by papillary ingrowths from their walls. This view is supported by the fact that in some cases of colloid goitre, papillary ingrowths occur in the cysts.[3] While it is possible that such a process occurred in the present case, it is to be noted that intermediate stages between the simple acini and the fully formed papilligerous cysts are wanting, so that the two types of tissue may have developed simultaneously.

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[1] Hektoen and Riesman's *Text-Book of Pathology*, vol. ii, p. 895.

[2] *Transactions of the Pathological Society, London*, vol. xxxvii, p. 507.

[3] Hektoen and Riesman, *loc. cit.*

Obituary.

DOVE M'CALMAN, M.D. GLASG.

AFTER a short illness, Dr. M'Calman, of Oban, died there on 25th May, in his sixty-fifth year. A native of Bonawe, he removed to Glasgow in early life, and engaged for a time there in business. Turning his attention to medicine, he graduated M.B., C.M. (with commendation), in 1875, after which he continued his studies at Bonn and Vienna. On his return to this country he was appointed a medical officer to an asylum in England, a post which he held for some time and relinquished to commence general practice in Ballachulish. Here he remained till about twenty years ago, when he removed to Oban. He graduated M.D. in 1881. In Oban he was instrumental in founding the West Highland Cottage Hospital, to which he acted as visiting surgeon till last year, when failing health led him to retire.

When we state that Dr. M'Calman constantly kept himself in touch with the advances in medical knowledge, it is not surprising to hear that he built up an extensive practice. Of great stature, of kindly heart, and of retiring disposition, M'Calman will be much missed, and his death will cause a sad void, not only in Oban and district, but in Glasgow where he had many staunch friends.

CURRENT TOPICS.

GLASGOW UNIVERSITY: CHAIR OF PRACTICE OF MEDICINE.—The King has been pleased, upon the recommendation of the Secretary for Scotland, to approve the appointment of Professor Samson Gemmell, M.D., Professor of Clinical Medicine in the University of Glasgow, as Professor of Practice of Medicine in that University in the place of the late Sir T. M'Call Anderson.

Western Infirmary Appointments.—At their meeting in the end of May, the managers of the infirmary appointed Drs. J. P. Boyd, R. Home Henderson, Dingwall Kennedy, and John W. Renton to be Anæsthetists. Dr. David Dickie was promoted to be Dispensary Gynæcologist *vice* Dr. E. H. L. Oliphant, resigned. Dr. J. Stoddart Barr was appointed Assistant Dispensary Surgeon for Diseases of the Ear.

Royal Samaritan Hospital Appointments.—Dr. Munro Campbell and Dr. David Shannon have been appointed Assistant Surgeons to the hospital.

British Medical Association: Glasgow and West of Scotland Branch.—The annual statutory meeting of the Branch was held in the new Maternity Hospital on Friday, 5th June. There was a large attendance of members. The President, Dr. Jas. H. Nicoll, occupied the chair. The Secretaries' and Treasurer's statements showed the Branch to be in an active and flourishing condition. The following office-bearers were elected for the ensuing year:—*President*, Dr. A. Campbell Munro, Paisley; *President-Elect*, Professor Ralph Stockman; *Vice-Presidents*, Dr. Jas. H. Nicoll and Dr. J. Lindsay, Kirkmuirhill; *Secretaries*, Mr. James Grant Andrew and Dr. Wm. D. Macfarlane, Jun.

In the evening a dinner took place in St. Enoch Hotel, at which over seventy members were present. Dr. A. Campbell Munro presided. The guest of the evening was Dr. Bruce Goff, who for twenty-five years has represented the Branch on the Council of the Association. Dr. Nicoll, on behalf of the Branch, presented Dr. Goff with a copy in silver of the Warwickshire vase, and with four fruit dishes. Dr. Goff, in acknowledging the gifts, gave an interesting retrospect of the Association during the time he had represented the Branch on the Council, a position from which, owing to circumstances over which he had no control, he had now to retire. Other toasts followed, and a very pleasant evening was spent.

NEW PREPARATIONS, &c.

From Messrs. Burroughs Wellcome & Co.—

1. *Tabloid Phenol and Menthol Compound.*—A gastric stimulant and antiseptic, containing in each tabloid phenol, gr. ¼; menthol, gr. ½; oil of cajuput. ♏ 1.

2. *Hemisine.*—This 1 in 1,000 solution of the active principle of the suprarenal gland has been sent in a small stoppered bottle containing 5 c.c., and included in the containing box is a tube of soloids of sodium chloride (gm. 0·17) for preparing normal saline with which to dilute the hemisine. This combination will be of distinct convenience when it is desired to use solutions more dilute than 1 in 1,000.

From Messrs. Parke, Davis & Co.—

1. *Gelatin-coated Pills Aloin and Phenolphthalein Compound*, containing in each pill aloin, gr. $\frac{1}{4}$; phenolphthalein, gr. $\frac{1}{2}$; strychnine, gr. $\frac{1}{80}$; extract of belladonna leaves, gr. $\frac{1}{12}$; powdered ipecacuanha, gr. $\frac{1}{15}$. This combination should give prompt and thorough evacuation of the bowels if a couple of pills be taken at bedtime.

2. *Tablets of Purified Tuberculin* are now supplied, one of which, dissolved in 1 c.c. of sterile distilled water, forms the 1 per cent solution employed for the ophthalmic diagnosis of tuberculosis after the method of Calmette.

3. A sealed bulb of *Staphylococcus Vaccine*, containing in 1 c.c. one hundred millions of staphylococci. This has been prepared at the Inoculation Department of St. Mary's Hospital under the direction of Sir A. E. Wright. The department also supplies vaccines of *Streptococcus*, *Gonococcus*, *Tubercle Bacillus*, and *Typhoid Bacillus*. With the sealed bulb short directions for use are supplied, which are very clear and can easily be carried out. Messrs. Parke, Davis & Co. are sole agents for these vaccines.

From Messrs. The Bayer Co.—

Coryfin, a substitute for menthol. This is a colourless fluid with faint menthol odour. Chemically it is the ethylglycollic ester of menthol, and is soluble in alcohol, ether, chloroform, and olive oil, but it is with difficulty soluble in water. It is similar in its action to menthol, and though its effects are produced somewhat more slowly, these last longer than in the case of menthol. It is of use in the same class of cases in which menthol is of benefit, *e.g.*, neuralgias and catarrh of the upper air-passages (especially in acute rhinitis). Small bottles of the fluid, with brush attached to the cork, are supplied (price 9d.), and it is also put up in $\frac{1}{2}$ oz. and 1 oz. bottles.

From Messrs. Callard & Co.—

Sample loaf of *Cellulon Bread.* This is a brown bread for use by diabetic patients. It is claimed that it contains practically no carbohydrates, and that it is the most palatable starchless bread produced. With regard to its taste, it is better than a great many diabetic foods, but even when eaten with butter, with plenty of salt in it, the taste is distinctive, and one would hardly eat it from choice. The test with iodine and acid yields no reaction for starch or dextrine, and it does not reduce Fehling's solution when boiled with it. On hydrolysis with acid and boiling, the resulting solution, after neutralisation, does reduce Fehling, but to such a slight extent that the makers' claim as to absence of carbohydrate is well borne out by these tests. The loaf keeps moist for several days. Each loaf costs one shilling.

MEETINGS OF SOCIETIES.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.

SESSION 1907-1908.

MEETING XIV.—3RD APRIL, 1908.

The President, DR. WALKER DOWNIE, *in the Chair.*

I.—CONGENITAL HEART DISEASE.

BY DR. R. BARCLAY NESS.

A boy, T. W. H., aged 2 years and 8 months, attending the Dispensary of the Royal Hospital for Sick Children, was presented with well-marked evidence of congenital heart disease.

History.—The patient is the second of a family of two, the elder being a healthy boy of 4½ years. After the birth of the patient, the mother's attention was not attracted by anything unnatural about the child until he was 8 weeks old, when she took him to see a doctor on account of a sore eye. The child was crying during the examination, and cyanosis becoming very marked it was suggested, and found to be the case, that he was affected with a congenital heart lesion.

Physical condition.—The cyanosis at present is very evident in the face, especially the lips; also in the ears, hands, and feet. The intensity of the cyanosis varies greatly from time to time, being most marked and accompanied with a little dyspnœa, when the child is fretful and crying, or making any unusual effort. The blood, removed by a puncture from the lobe of the ear, was found to be extremely dark in colour and to coagulate easily. The hæmoglobin was as high as 120 per cent, while the red blood cells were over twice the normal number. The white cells were also greatly increased.

The limbs are cold and livid, while the finger ends and toes are slightly enlarged, a condition often present in those suffering from chronic obstruction to the pulmonary circulation.

The examination of the heart shows that, apart from a little enlargement to the right, there is no great increase of the area of cardiac dulness. There is, however, a loud ventricular systolic murmur heard all over the cardiac area, but best heard in the pulmonic area and least in the aortic. It is unaccompanied by any thrill or abnormal pulsation. It is not possible from the character and distribution of this murmur to determine the precise nature of the congenital defect, but the fact that the murmur is best heard at the pulmonic area suggests that there is at least some obstruction at the pulmonic valve.

Such an obstruction is one of the most common lesions in congenital affections of the heart, but it is seldom present alone. Commonly it is associated, on account of the increased pressure produced on the right side of the heart, with an incomplete interventricular septum, and a foramen ovale which remains patent after birth. Further, the ductus arteriosus may also remain patent, because the pressure in the pulmonic artery, owing to the obstruction at the pulmonic valve, will be much less than in the aorta. Hence, with the establishment of the pulmonary circulation after birth, there will be a reverse flow of blood from the aorta through the ductus arteriosus to the pulmonary artery. In this way the pulmonary circulation will be supplemented.

It is when there is such obstruction at the pulmonic valve, with the persistent patency of one or other of these fœtal openings, that cyanosis is likely to occur, because there is only a certain proportion of the blood being aërated by passing through the lungs. But cyanosis may be also explained, according to many, by back pressure and stasis in the capillary veins. Few believe at the present time that cyanosis may be explained by a mere mixture of arterial and venous blood from the passage of blood from the right to the left side of the heart through a defective interventricular septum and patent foramen ovale. The interventricular septum has been found *post-mortem* to have been completely absent, and yet cyanosis had not been present.

The *prognosis* in congenital heart affections is not good as regards life. Few patients pass from childhood to the stage of adolescence. There is a great tendency towards pulmonary complications, *e.g.*, bronchitis (of which there is a slight degree in this child), broncho-pneumonia, and phthisis. It says, however, a great deal for the resistance of this child that he passed through an attack of whooping-cough when a year old, and, again, measles only three months ago—two specific ailments so often complicated with bronchitis and broncho-pneumonia.

Treatment consists simply in having the child warmly clad, feeding him on a simple diet, so as to ward off gastro-intestinal disturbances, and adopting measures to prevent the occurrence of pulmonary complications. If such occur, the conditions must be treated in the usual way with the exhibition of cardiac tonics. These, too, must be administered when under other circumstances there is any indication of heart failure.

II.—CEREBRAL DIPLEGIA.

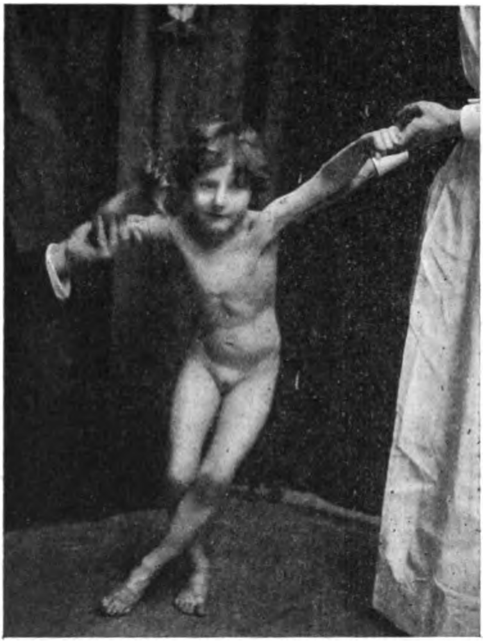
By Dr. R. Barclay Ness.

A girl, E. C., aged 6 years, was brought to the Dispensary of the Royal Hospital for Sick Children in June, 1907, on account of stiffness of the legs and inability to walk. The condition was evidently a form of cerebral diplegia.

History.—The family history need not be given in detail. Neither on the father's side nor on the mother's could any facts of importance bearing on the case be obtained. The mother is of a nervous temperament. She married when 19 years of age, and when little over 20 the patient was born. The mother states that she was much worried during this pregnancy, and that the birth was premature by one month. The child was small and puny, and some time elapsed before the child cried, the doctor having to perform artificial respiration, and take other means to resuscitate the child. The only other child of the family is a little boy, aged 1 year, who is quite healthy. There were no miscarriages between the birth of these two children.

The patient during the first year was reared with difficulty, yet teething began at 5 months, and proceeded fairly rapidly. Sight and hearing appeared normal, but there was little attempt at speaking until close upon two years. The mother did not consider her then a backward child. To her she appeared as intelligent and responsive as a child at her age should be. She is not, however, now equal in intelligence to the average child of her age. There was no history of convulsions.

With regard to the spastic paralysis, which is the chief feature of the condition, the mother states that the stiffness of the back and limbs showed itself first when the child was about 1 year old, and that it was most noticeable when bathing and dressing the child. It is quite possible that the spasticity was present even earlier, because the mother admits the child could never sit easily on her knee. Any attempt to place her in this posture resulted in the back becoming stiff and the legs extended, so that the child tended to slip downwards.



E. C.—Cerebral diplegia with athetosis.

Physical condition.—The chief feature is a more or less generalised rigidity, most marked, however, in the legs. The attitude of the child as she is held on her mother's knee is somewhat cramped. There are also distinct kyphosis, some flexion and adduction of the arms, and flexion and adduction of the thighs, with extension of the legs at the knees. Handling the limbs increases in a great measure the spasm of the muscles. This is well marked in the legs, and the spasm produced in the adductor muscles may be so great as to prevent the separation of the legs to any great extent.

When the child is put to the ground it is impossible to get her to stand or walk, because the legs in the extended position cross so that the one cannot be brought in front of the other without great difficulty, and in the attempt the child requires to be supported by the armpits. The muscles are well developed and firm from their constant state of spasm.

The knee-jerks are greatly increased; ankle-clonus is present; and the Babinski sign (dorsal extension of the great toe) is well marked. These phenomena are present on both sides.

The arms are the seat of spasm also, but to a much less extent than in the legs, while the increased reflexes are not so easily elicited. A feature, however, of some interest is the presence of athetosis in the right hand. This is easily brought out by any attempt on the part of the child to grasp some object.

The head is of unusual shape, being flattened in the posterior aspect. Its circumference is 18¼ inches. The general intelligence of the child is a little below the normal, though the mother does not think so, having succeeded in teaching her to repeat things from memory. The tongue does not protrude from the mouth, but the palate is a little highly arched. The teeth are generally good and well set. Sight is normal. There is neither nystagmus nor strabismus, and the fundi by ophthalmoscopic examination are normal. Hearing is good. Speech is a little indistinct. Habits are cleanly.

The thoracic and abdominal organs are normal. She weighs 2 st. 4 lb., and in height she measures 3 feet 4 inches.

General Remarks.—The paralysis is of the spastic type, the muscles being under the control of the spinal centres, while the cerebral control is largely absent. This is due, in the first instance, to the implication of the cortical centres of the cerebrum, and in the second, to the involvement of the motor tract, which passes from these cerebral centres to the spinal centres—a tract which is represented in the cord by the direct and crossed pyramidal tracts. The lesion is one involving the upper motor neurons.

The history suggests two possible etiological factors in the production of this lesion—

1. The child was prematurely born. The exact cause of this is unknown, but the probability is that some toxic agents were in operation, and that these not only brought about premature birth, but exerted their baneful influence upon the nervous system, particularly the centres of the cerebral cortex. This may have resulted in the actual degeneration of the cortical centres during fœtal life, in which case evidence of the disease would be present at or immediately after birth. Or it may have resulted merely in the lowering of the vitality in the cells, in which case the child would be born simply with an inherited tendency to degenerative changes taking place. Possibly such a tendency may be inherited without the action of toxins at all. The symptoms of the disease would in these latter cases not be apparent until a period of apparent health had elapsed. In any case, pathological changes occurring in the cortical cells would be quickly reflected on the motor tract. If during fœtal life, or immediately after birth, its development would be arrested because the tract is of late development, and the fibres are not medullated until some months after birth; while if much later—towards the end of the first year or later—when the motor pathway has been fully developed, degenerative changes in the cortical centres would be followed by descending sclerosis of the motor tract. In the case presented to you, the changes must have begun at an early period—that is, in fœtal life, or in the early months of infancy. It is impossible to dogmatise, though the former is the more likely.

2. Another possible cause of cerebral diplegia is that referred to in the history, viz., asphyxia neonatorum. This sometimes leads to cortical hæmorrhage, with destruction of the cortical centres and secondary involvement of the motor tract. But the mother indicates that there was no difficulty at birth, and that the child was very puny and had little vitality. It is probable, therefore, that this itself would account in a great measure for the condition of the child when born, a condition which, in my opinion, had little to do with the subsequent development of the diplegia.

III.—TWO CASES OF CEREBRAL DIPLEGIA.

By Dr. T. K. Monro.

Case 1. *Boy from a family of which two other members have already died from the disease.*—T. R., æt. 2 years, was brought up on the breast, and seemed quite healthy till four months ago, when his power of walking became less, and he occasionally fell. His power of grasping and his mental acuteness also became less. For the opportunity of studying his case I am indebted to Dr. John Patrick, on whose recommendation he was brought to see me at the Glasgow Royal Infirmary on 8th January last. At that time he was said to be very anxious to walk, but he could scarcely manage it by himself, even if he held on to articles of furniture. If he was led by the hand, both legs were seen to drag. While he was sitting, the head drooped forwards distinctly.

He is still able to sit up for a short time by himself, but his head soon falls forward. He cannot stand or walk. There is distinct rigidity of the lower limbs. The knee-jerks are exaggerated. The left plantar reflex is extensor; the right is uncertain, but there is a tendency to over-extension of the first metatarso-phalangeal joint.

The general nutrition is extremely good, but almost no intelligence remains. Patient was able to speak till about two months ago, but now he never utters a word. He seems pleased when his food is brought to him, but otherwise shows no interest in anything. It is doubtful even if he recognises his mother. He cannot retain an article in his grasp, and does not appear to notice when it has fallen. He passes the evacuations in bed.

There is some rigidity in the upper limbs, and occasional jerking movements, but no distinct athetotic movements have been noted. On one occasion, after admission to the wards on 21st February, he threw himself out of bed by a sudden jerking movement, while his mother was beside him.

The teeth are good, and the palate is normally arched. The testicles have not yet fully descended into the scrotum.

There is sometimes marked flushing of the face, *e.g.*, while he is asleep and while he is being fed. A gurgling noise is heard when he swallows, but there is no real difficulty with deglutition.

One or two enlarged lymph glands are found at the angle of the jaw. Nothing abnormal is found in the thoracic or abdominal viscera. The pupils and fundi are normal.

Patient is the youngest of four children. The first is a healthy schoolboy, who is now in his ninth year. The second (a boy) and the third (a girl) died of a condition similar to that from which patient is suffering. The second began to suffer at 1 year, and died two years and seven months afterwards. The third began to fail at 1 year and 3 months, and died one year and seven months afterwards.

Through the kindness of Dr. James A. Aitken, I had an opportunity of examining the girl in private in February, 1905, when she had been ill for about three months. "Not noticing" was the first symptom manifested by each of the three children. A brother of the father has been in an asylum.

There is no consanguinity in the parents of the present patient, and the mother apparently did not suffer from any injury in her pregnancies; indeed, she has always been very healthy. The father is two years older than the mother.

CASE 2. *Isolated case.*—Tom M'K., now aged 11½ years, was sent to me at the Glasgow Royal Infirmary by Dr. S. P. Clark in July, 1905. He had always been recognised as nervous, but had been a healthy and intelligent boy until about March, 1905, when it was noticed that he did not walk properly, and that he tended to drag one leg. His mother says he may have been dull, and indisposed to play with other boys, for a time before this. He was taken from school, and improved for a time in the early summer of that year, but on the whole his progress since then has been very unsatisfactory. He is untidy with regard to the evacuations. His speech, which was somewhat thick even in early childhood, is now greatly impaired. He talks loudly when he ought to be quiet, and in the sounds he utters, and in his conduct, displays great intellectual defect. He was always backward with his lessons, but was in the first standard when he left school at the age of 8½ years.

He is able to stand, but, if not supported, is apt to fall, so that he cannot be trusted to walk by himself. The legs are kept apart in walking. The knee-jerks tend to be exaggerated. Nystagmus is present. There has been noted all through his illness special involvement of his left side. Thus, he drags the left leg more than the right; the left shoulder tends to be lower than the right; he scarcely uses his left hand for grasping, and yet the left fingers move more than the right; the left knee-jerk in September, 1905, was noted to be exaggerated, while the right was normal; the right plantar reflex is flexor, while the left is variable; the left calf is slightly thinner than the right.

Muscular nutrition is good. Nothing noteworthy was found on ophthalmoscopic examination in December, 1905. At present the left pupil is medium sized, while the right is larger. The arch of the palate is somewhat high, and the isthmus of the thyroid gland is large.

Patient is the youngest of a family of eight, of whom two were stillborn, and another (supposed to be an eight months' child) lived only a month. At patient's birth the labour was instrumental, whereas all the other labours were normal.

The parents are not blood relations, and the mother apparently did not suffer from any disease or injury while she was pregnant with this boy.

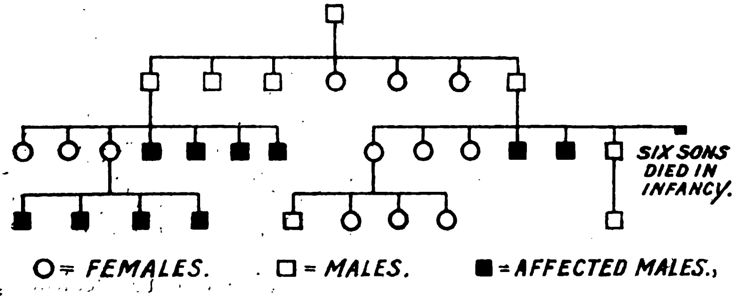
IV.—MUSCULAR DYSTROPHY.

By Dr. R. Barclay Ness.

This condition is characterised by a progressive muscular atrophy, which is primary or idiopathic in the sense that the lesion is supposed to be dependent on an inherited tendency in the muscles themselves to degenerate (myopathic), and not dependent upon any lesion in the spinal cord (myelopathic) or other part of the nervous system.

The atrophy may be marked by diminution in the size of the muscles, but sometimes it is associated with distinct enlargement. This is not due to a true hypertrophy, but is the result of increase of fat and fibrous tissue. A point of some importance in the diagnosis of this condition is that it tends to run in families and to occur in young people.

As illustrating the hereditary and family character of this affection, I may refer to the genealogy of a family published by me in the *Glasgow Medical Journal*, 1891, showing how four brothers, their four uncles (brothers of their mother), and two male cousins of their mother were all similarly affected with one form of muscular dystrophy, viz., pseudo-hypertrophic paralysis. This is graphically represented in the following scheme:—



Genealogical tree showing male members affected with pseudo-hypertrophic paralysis.

There are three important varieties of muscular dystrophy described, though there are others which are less defined. The three varieties referred to are—

1. *Erb's juvenile form* of idiopathic muscular atrophy, which occurs at or before adolescence, and is marked in the early stage by atrophy, sometimes preceded by enlargement, of the muscles of the shoulder girdle and upper arm.

2. *Landouzy-Déjerine form*, or facio-scapulo-humeral form. This may occur in early childhood, and is marked in the early stages by the atrophy, usually without enlargement, of the muscles of the face and those of the shoulder girdle and upper arm.

3. *Pseudo-hypertrophic paralysis*, which affects children, mostly of the male sex, and usually before 10 years of age. The atrophy is associated with enlargement of muscles, those affected first being usually those of the legs. Two cases of this class will be shown—one in an early stage of the affection, the other in an advanced stage.

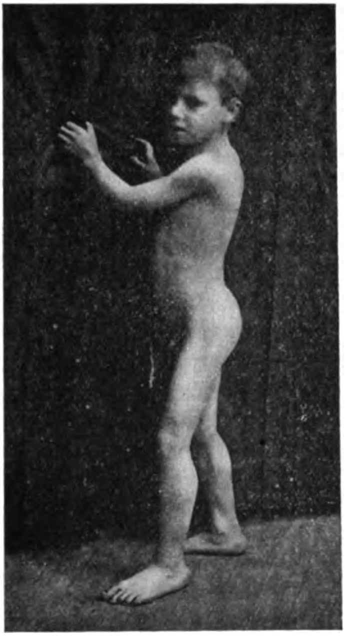
CASE 1. *Pseudo-hypertrophic paralysis in an early stage.*—Boy, J. M., aged 8 years, was first seen by me at the Dispensary of the Royal Hospital for Sick Children on 30th November, 1907. The mother's statement was that he was awkward in walking, could not run with ease, had difficulty in mounting stairs, fell to the ground from little cause, and rose again with great difficulty.

History.—It is unnecessary to give the family history in detail. No other member of the family or any relation on the father's or mother's side was similarly affected. The mother is not strong, and rather of the nervous temperament. As an infant, the boy was always considered healthy. He had no severe illness until he had measles when 4 years of age.

As indicating the early period at which the dystrophy manifested itself, it may be stated that he was close on 2 years old before he made any successful attempt at walking. Then, when able to walk, he did so in a very awkward fashion, fell easily, and had great difficulty in rising again from the ground. As he grew older his difficulties increased. He could not run about, and he could not ascend a stair. On this account he was late in being sent to school. When he did go, his companions were soon aware of his disabilities, but they helped him rather than took advantage of him, as is often done in these circumstances.

The mother never thought his trouble due to weakness, because she had noticed from infancy that the limbs were firm to the touch, and, as he grew older, that his legs about the calves were big and sturdy.

Physical condition.—The boy looks strong. His height is 44½ inches, which is a couple of inches or more less than the average height of a boy at his age. His weight is about 43 lb., and less than the average by about 4 lb. He stands with his legs wide apart, and there is a distinct degree of lordosis, the shoulders being well thrown back. In walking he has the characteristic waddling gait; running is difficult, almost impossible. Ascending stairs can only be accomplished with a great effort. When placed on his back on the floor, he rises in the characteristic fashion of one affected with pseudo-hypertrophic paralysis—rolling over on his face, getting on his hands and feet, bringing his hands gradually nearer to the feet, until with an effort they can be transferred to his knees, he then gradually pushes himself up by his hands on his



J. M.—Pseudo-hypertrophic paralysis in an early stage.

thighs, until with an effort he can throw back his shoulders and assume the upright position, the lordosis of the spine becoming again well marked.

At present he can at times attain the erect position without putting his hands to his knees. This is the result of the treatment by massage and electricity which he has recently undergone.

The changes in the muscles characteristic of the affection are very apparent. First, with regard to those that show enlargement. This is most notable in the case of the calf muscles—gastrocnemius and soleus. They are greatly enlarged, giving the calves an enlarged and rounded appearance. The right measures 9½ inches; the left, 9¾ inches.

The gluteal muscles are similarly affected, producing a distinct enlargement and firmness of the buttocks. It is to the weakness of the gluteus medius that the characteristic waddling gait is in a great measure due. It is unable to maintain the pelvis in position while the leg of the opposite side is being carried forward, hence the trunk must be thrown more than usual over to the side to bring the centre of gravity over the foot. It is due also to the weakness of the gluteal muscles that the lordosis is largely present, because it permits the tilting forward of the pelvis with the lower lumbar vertebræ. This, to preserve the centre of gravity, must be counterbalanced by the throwing back of the shoulders.

Another set of muscles which are marked by enlargement are the deltoid, infraspinatus, and supraspinatus, especially the first two.

The muscles that show most wasting are the flexors of the elbow, the sternal portion of the pectoralis major, and the latissimus dorsi. The two last enter into the formation of the anterior and posterior folds of the axilla, so that, by causing the patient to raise the arm into the required positions, the degree of wasting can readily be determined. The flexor muscles of the knee are also much affected by atrophy.

Many of the affected muscles it would be difficult to place in either of these two groups, because they are neither enlarged nor much wasted; yet they may be firm to the touch. Among these are the erector spinæ, the triceps, the muscles of the fore-arm, quadriceps femoris, and the extensors of the foot. The absence of the knee-jerks is dependent upon the involvement of the quadriceps femoris. Some muscles have escaped altogether, such as those of the face, neck, the trapezius, and intrinsic muscles of the hands.

These are the chief points in a case, although of a number of years' standing, not yet far advanced. The condition, however, tends gradually to become worse, because of the muscles becoming more and more implicated.

The next case will show to what extent this may occur.

CASE 2. *Pseudo-hypertrophic paralysis in an advanced stage.*—Boy, A. B., aged 13 years, was seen first at the Dispensary of the Royal Hospital for Sick Children when he was between 3 and 4 years of age. He was brought by his mother on account of unsteadiness in his walk and frequent falling, which she supposed was due to something being wrong with his back.

History.—The patient is one of a family of six, five of whom were boys. None of them were affected in the same way as the patient. Two (girl and boy) died in infancy, the rest are strong and well. There is nothing of importance to note in the mother's or father's family history beyond the fact that the father has a brother, aged 33 years, in an asylum.

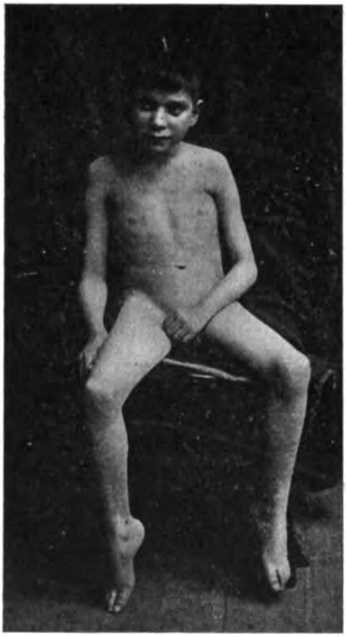
The mother states that though he was nursed on the breast he was a difficult child to rear. He was always fretting, and when teething got very thin. He had always a rough, scaly skin (ichthyosis). As he grew up he never made any attempt to creep on the floor, and any attempt at walking was delayed until he was 2 years of age. He never could sit up properly. The mother noticed wasting about his ankles and wrists more than any enlargement in his calves or elsewhere.

Later on, when he went to play with other children he chose as his companions children much younger than himself, because among those of his own age he was always coming to grief from being constantly knocked over at play. On more than one occasion he received a scalp wound, which required to be stitched.

Physical condition.—When brought to the dispensary, when 3 or 4 years of age, he was recognised as being in an early stage of pseudo-hypertrophic paralysis. He had the large calves, the waddling gait, the lordosis, and the characteristic way of rising from the supine to the erect position.

From then till now he has been seen from time to time, and the succession of years has been marked by a gradual increasing failure of muscular power and by great wasting of muscles. He is presented to you to-night as showing the advanced condition of a case of pseudo-hypertrophic paralysis.

The important facts to notice at present are the great emaciation and general helplessness of the boy. Lying on his back, he can only to a slight extent pull up and extend his legs. He can move his arms slightly, but they are quite flail-like. He cannot raise himself into the sitting posture. Placed in this position his back becomes markedly curved (kyphosis). Any attempt with hands in the armpits to raise him by the shoulders only elevates the scapulæ and brings them together on the back, all support being evidently lost by the wasting of such muscles as the pectoralis major, latissimus dorsi, serratus magnus, &c. Any attempt to put the child on his feet shows that he cannot support himself in the least. The muscles of the limbs and trunk may be described generally as being in a most wasted condition. This is associated in some places with considerable deformities. For



A. B.—Pseudo-hypertrophic paralysis in an advanced stage.

example, both knees are partially flexed from contracture of the hamstring muscles, and cannot be extended. Again, both feet are in the position of talipes equinus from contracture of the calf muscles. It is partly due to these contractures that the boy cannot in any way support himself on his legs.

Another important fact which suggests the uncertainty of life in such a case is that, from weakness of the extraordinary muscles of respiration the child cannot easily by coughing clear his bronchial tubes of mucus. He has already had a bronchitis, and at the time, during the winter, I was afraid of it proving too much for him, but with treatment and keeping the boy at home it gradually passed off. The mother is quite aware of this danger, and does not always allow him to be taken to the cripple school in cold winter mornings.

The *prognosis*, as you can readily understand by a comparison of these two cases, is not good. The fate of the boy whom you saw first can be easily anticipated. The life of the patient in the advanced state of the disease depends on the progress of the increasing muscular weakness, and the chance occurrence of some such pulmonary complication as has already been referred to.

The *treatment* in the advanced case is simply one of care, and the adoption of measures to prevent the onset of pulmonary affections. Tenotomy for the contractures would avail little in this case. In the early stage of the disease it is important that the patient should move about as much as possible without producing undue fatigue, while the nutrition of the muscles should be assisted with massage and even electricity. General tonics and cod liver oil may also be of service. Complete rest for any time is a mistake, as the muscles rapidly waste, and the patient becomes gradually more and more helpless.

V.—SPORADIC CRETINISM.

By Dr. R. Barclay Ness.

A boy, W. M'D., aged 9½ years, was brought to the Dispensary of the Royal Hospital for Sick Children on 29th January, 1908, on account of slight pustular eczema of the head, with secondary inflammation of the lymphatic glands in the right occipital region. This received appropriate treatment, but the child from the first was recognised as a cretin.

History.—For the first year of life the child appeared to the mother in every way natural. During the second year the boy did not develop in the usual way. He presented a peculiar appearance, and could not hold up his head. It always fell to the left side. During the third year, the mother's description indicates that the cretinoid state must have become well marked. The facial expression was altered, the complexion dark, the hair dry and coarse, the scalp scaly, the tongue large and protruding from the mouth, the skin of the whole body dry, the limbs stunted, and the hands and feet large. There were no signs of teething until the end of this year. There was no attempt at walking, and none at speaking.

During the succeeding years the condition became still more marked, and it seems impossible for the condition not to have been recognised by the various doctors who saw the child for temporary illnesses. Yet it appears that no clear indication was given to the mother of the nature of the trouble, nor of the necessity of persevering in any definite line of treatment, until the middle of December last, when the doctor, who attended the child at that time for measles, told her what was wrong.

Notes in detail were taken of the family history, but there is nothing important to note beyond the fact that a half-brother (by the same father), aged about 16 years, is an imbecile, but not, as far as known, a cretin.

Physical condition.—The boy presents all the appearance of a typical cretin who has never undergone treatment. The arrest of physical development is well indicated by the difference between the apparent and real age of the child. He is 9½ years of age, yet he is only 30 inches in height—less than the average height of a child 2 years old. On 5th February he weighed 29¾ lb. (without clothes), which is under the average weight of a child of 3 years. An average child of 9 years would be in height 50 inches, and would weigh 53 lb. Yet the head is large, the greatest circumference being 20¼ inches, a measurement which is only a little short of that for boys of the same age. The accompanying reproduction of a photograph (Fig. 1) taken by Dr. Alex. MacLennan, depicts the characteristic features of the face. It is broad and of placid expression. The nose is sunken and the extremity flattened. The eyes are dull and widely separated; the lips are thick, and the tongue protrudes from the mouth. The teeth are all carious, and are almost entirely of the first dentition. Salivation, with dribbling from the mouth, is more or less constant. The hair is coarse and dry, and the scalp very scaly. This corresponds with the condition of the skin of the face, trunk, and limbs when the child was first seen. It was then dry, thick, coarse, and scaly, but under the recent exhibition of thyroid it has now become moist, smooth, and pliable. The neck is full, and the adipose tissue above the clavicles is unnaturally thick.

The head falls forward, and in the sitting posture there is marked kyphosis, due to the weakness of the erector spinæ muscles. The abdomen is greatly enlarged, and the umbilicus protuberant. The measurement of the abdomen at the level of the umbilicus on 5th February was 22¾ inches. The limbs are short and bent. The hands and feet are large and flat. The child cannot stand without support.

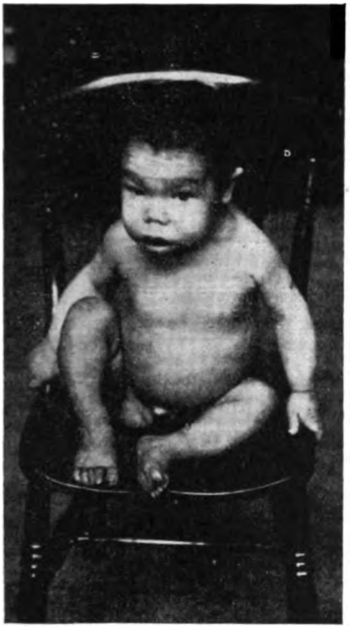


FIG. 1.

W. M'D.—Cretin, aged 9½ years.

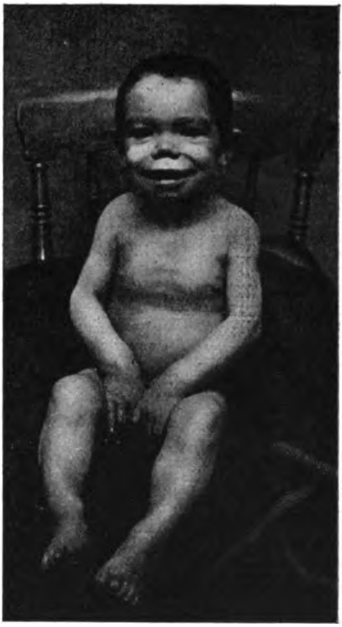


FIG. 2.

The same, after fourteen weeks' treatment.

The mental deficiency corresponds with the arrest of physical development. He recognises and responds to the mother to some extent, and can like an infant be entertained or made to fret, according to the manner in which he is treated. He cannot speak; he only emits monosyllables. He is uncleanly in his habits.

Treatment.—Dry thyroid, 3 gr. thrice daily, was ordered on 29th January, but was diminished to 2 gr. twice daily on 5th February. This dose has been continued since. On 11th March the following changes were noted as having occurred:—The height was increased by half an inch, the weight had diminished from 29¾ lb. (5th February) to 25½ lb., showing a loss of 4¼ lb. in five weeks. The child was generally much thinner, the abdomen and umbillicus less prominent, the former measuring only 18 inches as compared with 22¾ inches on 5th February. The skin, with the exception of the scalp, had completely desquamated, and had become moist, soft, and pliable. The expression of the face had become more intelligent. The tongue was smaller, and did not protrude from the mouth. Fig. 2, reproduced from photograph taken on 9th May, after the meeting of the Medico-Chirurgical Society at which the patient was shown, and after fourteen weeks' treatment, indicates still further improvement. On 16th May the height was 31½ inches (gain 1½ inch), weight, 32 lb. (gain, 2¼ lb.), and circumference of abdomen at level of umbilicus, 17½ inches (loss in girth, 5¼ inches). All this suggests that although the treatment has been late it may yet be of considerable service in still further promoting both physical and mental development.

VI.—Dr. H. Rutherfurd showed a case of irreducible intussusception treated by lateral anastomosis. The age of the child at the operation was 4 months; duration of symptoms, four days; intussusception of ileo-cæcal variety.

(The report of this Meeting will be continued in our next issue.)

GLASGOW SOUTHERN MEDICAL SOCIETY.

A meeting of this Society was held on 14th March, the President, Mr. A. E. Maylard, in the chair.

Dr. Morton read a paper on "Eczema: Its Causes and Treatment." Dr. Morton said that this disease could be brought about by various causes. Seborrhœic eczema he excluded from the paper, as he did not consider it a true eczema. In most cases, at the beginning of an eczematous attack, the patient is in a poor state of health, but in many instances when he is seen by the doctor the debility has disappeared, and the disease is a persisting local condition. Nervous factors are nowadays largely blamed as a predisposing cause.

Exciting causes include local agencies, which may be mechanical, thermal, chemical, or parasitic. Usually parasitic causes are added to mechanical, *e.g.*, after scratching with dirty nails. It is possible that in many cases seborrhœa is an antecedent causative factor. In relapsing cases a persistent patch can in most cases be discovered, which is responsible for the recrudescence.

General treatment.—Diet: Certain kinds of food seem to aggravate the disease. "When," "how," and "how much" to eat are of more importance than "what" to eat. Dr. Morton restricted the patient to three meals per day, except in cases of young children and aged people. *Exercise:* Daily in open air. *Alcohol:* A little lager beer or good burgundy will do no harm. Little or no internal medication is required, unless some special function requires definite treatment. Tartar emetic and tincture of aconite may sometimes be of service. Treat every case as if it were parasitic in origin.

Local treatment.—(1) Clean the skin (remove scabs, crusts, or scales); (2) soothe the part by using boracic starch poultices, or tarry lotions; (3) apply a drying remedy, such as a weak astringent lotion; (4) apply an appropriate remedy; begin with a weak one, but gradually increase the strength of the application. Water is harmful, as it washes away the fine epidermic cells.

After the discussion, in which Drs. Duncan, Burges, Robertson, Chalmers, Forrest, and Maylard took part, Dr. Morton was awarded a hearty vote of thanks.

REVIEWS.

The Prevention of Infectious Diseases. By JOHN C. M'VAIL, M.D. London: Macmillan & Co. 1907.

IT would be a simple truism to say that anything from the careful and accurate pen of Dr. M'Vail is sure to be well worthy of perusal, and the present volume is no exception.

With the exception of a minimal revision for publication, the book consists essentially of the Lane lectures delivered by Dr. M'Vail in 1906 at the Cooper Medical College, San Francisco.

As the author points out in the preface, there is no attempt at originality, but the examples of methods of control of most of the diseases are nearly all from his own experience. This is precisely where the chief value of the book consists. Every page bears convincing evidence of Dr. M'Vail's intimate knowledge of this most important part of preventive medicine, and if the actual matter is not original, one forgets this on account of the fascination of the pages themselves.

To those who are already more or less familiar with many of the facts relating to infectious disease with reference to Glasgow and the counties of Stirling and Dumbarton, the revelations are not so striking as they must have appeared to his American audience. At the same time, some of the pictures of closes in High Street only forty years ago are startling enough, and, with the additional views shown at the actual lectures, must have been intensely interesting to our cousins across the sea.

The value of the book to the reader is much enhanced by the admirable selection of maps, plans, and views judiciously introduced throughout.

Altogether, Dr. M'Vail is to be heartily congratulated upon the reproduction in book form of the Lane lectures for 1906.

The Vermiform Appendix and its Diseases. By DUNCAN MACARTNEY, M.A., M.D. Glasgow: James MacLehose & Sons. 1908.

THIS small volume of one hundred and odd pages is founded on notes of the author's lectures to students in the Western

Infirmary, Glasgow. The notes were extended as a help to a junior student of surgery, in whom the author is interested, and as they seemed helpful to him in the earlier stages of his curriculum, it is thought by the author that they may be of service to others.

Beginning with a brief historical sketch, the author passes to the anatomy and physiology of the appendix. The description of the anatomy of the organ would be helped much by the introduction of illustrations; the physiology is largely what we have learned from Macewen in his Huxley lecture, and his views are freely quoted.

After considering the pathology and bacteriology, the author gives an account of acute appendicitis, following which is a chapter on differential diagnosis, and another on chronic appendicitis. In the chapter on treatment the author's views on operation are expressed as follows:—" . . . the surgeon who operates whenever appendicitis is clearly evidenced will have the best results for his patients and the most satisfaction for himself" (p. 74). This we consider sound practice. His views on the administration of opium are also sound. He recommends morphia to relieve pain, "even at the expense of running foul of that fetish, 'masking the symptoms.'"

Details are given of operative measures, and the book closes with remarks on post-operative treatment.

This is not a pretentious manual; but, small and unassuming as it is, it contains a great deal of commonsense. It is written by one who has had ample opportunities of observing and treating the disease, and it will be found useful by those who have not the opportunity of consulting a larger work.

Modern Surgery, General and Operative. By JOHN CHALMERS DA COSTA, M.D. Fifth Edition, thoroughly Revised and Enlarged. With 872 Illustrations, some of them in Colours. London: W. B. Saunders Company. 1907.

ON the back of the title-page information is given as to the repeated issues and editions of this well-known work. Published originally in 1894, it has appeared, between reprints and new editions, sixteen times. It is thus well known to the profession, and it would seem to have attained a wide popularity, which we must confess is fully deserved.

While the volume is of a handsome appearance as regards binding, type, and illustrations, its leading feature is that the matter, while good, is presented in a most readable style. It is a work which we can recommend to students as one which they will find of use both before and after graduation.

Anatomy of the Brain and Spinal Cord, with Special Reference to Mechanism and Function, for Students and Practitioners. By HARRIS E. SANTEE, M.D., Ph.D. Fourth Edition, Revised and Enlarged. With 128 Illustrations, 33 of which are Printed in Colours. London: Sidney Appleton. 1908.

CHANGES of great importance have taken place within quite recent years in the opinions held by experts on certain points belonging to the subject of localisation and conducting paths in the central nervous system, and it is extremely desirable that new editions of text-books should appear at sufficiently short intervals of time to enable practitioners and students to keep their knowledge up to date. A work of the kind now before us, which aims at associating mechanism and function with structure, is perhaps particularly appropriate in connection with the nervous system, and is likely to find favour with those for whom it is written. Professor Santee rightly refers to the importance of actual dissection of the brain by the student, each part being exposed and sketched as it is seen by the unaided eye, and afterwards examined with the microscope. The subject-matter is arranged with a view to the convenience of the dissector, and is illustrated by numerous useful figures. We congratulate the author on this new edition.

Clinical Treatises on the Symptomatology and Diagnosis of Disorders of Respiration and Circulation. By PROFESSOR EDMUND VON NEUSSER, M.D. Authorised English Translation by ANDREW MACFARLANE, M.D. Part I: Dyspnœa and Cyanosis. New York: E. B. Treat & Co. 1907.

IN an era when laboratory handbooks represent to such a large extent the new work that is being done in clinical medicine, it is a refreshing change to the physician to meet with a treatise, or essay, or lecture devoted to a few important symptoms. This kind of thing has been done in the past, and might be revived with advantage. In any case, we welcome the present volume by Professor Neusser in its English form.

Part I treats of dyspnœa and cyanosis in disorders of the respiration, and is introduced by a chapter on the conditions which give rise to dyspnœa. Part II treats of dyspnœa and cyanosis in disorders of the circulation, and in diseases of the digestive system, in infectious and other general diseases, in many kinds of poisoning, and in a considerable variety of other diseases. The last chapter, a short one, is on the therapy of dyspnœa. There is no index, but the table of contents is fairly full.

Trypanosomes and Trypanosomiases. By A. LAVERAN and F. MESNIL. Translated and much enlarged by DAVID NABARRO, M.D., B.Sc., D.P.H.Lond., M.R.C.P.Lond. With Coloured Plate and 81 Figures in the Text. London: Baillière, Tindall & Cox. 1907.

WHEN this work appeared in the original French nearly four years ago, it contained practically all that was known on the subject at the time, but since then much study has been devoted to trypanosomes and the diseases they induce in man and the lower animals. This fact finds an easy explanation in the discovery made in 1903 that sleeping sickness is a phase of a human trypanosomiasis.

In bringing the work up to date, Dr. Nabarro had to carry out a serious task, for the additions which he found it desirable to make increased the size of the work by more than a half; but there can be no question as to the incalculable benefit he has conferred upon his readers. The additions are indicated by square brackets, and among them are those included in the following list, which we quote from the preface to the English edition:—"The spirochætes; the Leishman-Donovan body; several new trypanosomes of small mammals, birds, batrachians, and fishes; recent observations on the occurrence of flagellates in tsetse-flies, mosquitoes, leeches, &c., and the possible relation of these parasites to the sexual forms of the trypanosomes of vertebrates; the recent observations upon the prevalence of human and animal trypanosomiases in various parts of Africa and in Asia; many facts in connection with human trypanosomiasis; and the microscopic changes found in the central nervous system in sleeping sickness and in dourine." Dr. Nabarro has also written a new chapter on the treatment of the trypanosomiases.

Within the limits of a short review one can do but scant justice to this very important volume. The reader opens it at random, and is soon attracted by an interesting passage, and before he knows he may be absorbed in the subject. We may mention that the historical aspect of the question is kept well in view, while the chapter on treatment is one that no earnest worker at the subject can afford to overlook.

The book is an admirable treatise on trypanosomiasis, a storehouse of information, written in a most interesting way, and in a literary style which makes it very easy to read. It is an excellent tribute to the special knowledge of the authors, the ability and diligence of the translator and editor, and the enterprise of the publishers.

The Experimental Prophylaxis of Syphilis. By Dr. Paul Maisonneuve. Containing Results of Experiments on the Subject carried out at the Pasteur Institute by Professors Metchnikoff and Roux. Translated, and with an Introduction, by Fernand L. de Verteuil, M.B.Ed., Surgeon R.N. Bristol: John Wright & Co. 1908.

This small book of little over ninety pages is a translation of Dr. Maisonneuve's thesis. The subject is considered in a systematic manner, and the various chapters deal with contagion, generalisation of the virus, action of physical and chemical agents on the virus, prophylaxis by chemical agents, and practical application.

After showing that the lesions of primary, secondary, and tertiary syphilis contain an infectious virus, the author declares that infection takes place through a solution of continuity in skin or mucous membrane, and describes how experiments prove that the disease is due to a *dermal* inoculation.

This last point suggests a local therapeusis in the early stages. Experiments on animals show that the occurrence of syphilis will be prevented if the seat of infection be treated with calomel before generalisation has occurred. The calomel is used in the form of ointment containing 33 per cent of the drug, with lanolin as a base.

So convinced was Dr. Maisonneuve by the results in animals, that he submitted to inoculation with syphilitic virus, the seat of inoculation being subsequently treated with the calomel ointment, and the result justified his faith.

The data, so far as man is concerned, are slender; but the reader can see from this volume how workers are engaged attenuating the virus by passing it through successive animals, and there is no reason why a protective vaccine may not in the near future be discovered. Meanwhile, accoucheurs and nurses may well use, as a protective lubricant, the formula given above.

The Under-Secretary of State for War in France has ordered the issue to all soldiers of boxes containing 5 grammes of calomel ointment to be employed as a prophylactic, and it is hoped that sufficient material may shortly be obtained on which to found statistics on the value of the measure. Special notes are to be made of the cases occurring in soldiers who have carried out this prophylactic treatment.

This book is intensely interesting, and it has been translated by Surgeon de Verteuil in a fashion that calls for remark. It abounds in facts which should be known to every member of the profession.

Rough Notes on Remedies. By WM. MURRAY, M.D., F.R.C.P. Lond. Sixth Edition. London: H. K. Lewis. 1908.

THIS excellent little volume thoroughly deserves the success it has already obtained, and we gladly recommend it to all our readers. This new edition includes a paper on "The Therapeutics of Indigestion," which was communicated last year to the Royal Society of Medicine.

A Manual of Diseases of the Nose, Throat, and Ear. By E. B. GLEASON, M.D., LL.D. London: W. B. Saunders Company. 1907.

THIS book, which we have read carefully, and with much pleasure, may be recommended as a sound and safe guide in the diagnosis and treatment of diseases of the nose, throat, and ears. One of the few points to which exception might be taken is the recommendation of the old and rightly discarded method of draining the antrum of Highmore by the extraction of the second molar tooth, followed by the tapping of the antrum through the tooth-socket by the insertion of a trocar and canula. This is an unnecessarily severe method in acute cases, and a wholly useless method in the successful treatment of chronic cases.

The book is well written, is free from padding, and is profusely illustrated. Further, it is perhaps the most satisfactory of the many transatlantic text-books dealing with these subjects which has come under our notice within recent years.

Diagnostics of the Diseases of Children. By LE GRAND KERR, M.D. London: W. B. Saunders Company. 1907.

AT first sight one is rather doubtful if there is sufficient scope in this subject to fill a volume which runs to some five hundred pages. The author, however, in the pages before us, makes a very good case, and carries the reader's interest throughout. There is, of course, as is necessary, a certain amount of space devoted to etiology and pathology, but by far the larger portion of the book is given up to the discussion of the symptoms and differential diagnosis of disease as it affects the various systems.

The book opens with several introductory chapters on the method of approaching the child, on obtaining the mother's story, on the valuable information obtained by inspection of the child as it lies in its mother's lap, and on the routine and systematic physical examination of the patient.

Thereafter comes the discussion of the various signs and symptoms met with in disease of the different regions, and this portion of the book is undoubtedly very good, and contains much useful information. We might mention, however, that the section on diseases of the blood is rather short, the different conditions not being considered in sufficiently great detail.

There are numerous illustrations, which help materially in the elucidation of the text.

The Treatment of the Diseases of Children. By CHARLES GILMORE KERLEY, M.D. London: W. B. Saunders Company. 1907.

A BOOK on this subject has been for a long time a great want in pediatrics, and we are pleased that the breach has at last been filled, and that, too, in such an exemplary fashion.

Text-books on general medicine, when dealing with the question of treatment, usually give the reader nothing more than a mere tabular review of the many remedies commonly employed. In this volume, however, the subject is discussed in great detail. Not only are various appliances and their modes of application minutely described, but also the indications for the various remedial measures are clearly set forth. One is astonished, however, to find, in a book so thoroughly up to date, no mention made of the treatment of post-diphtheritic paralysis by antitoxin as has been carried out for some time now by Comby in Paris. Nevertheless, one can only speak in praise of the whole production, and augur for it a great future. Numerous illustrative cases are quoted, and thereby add greatly to the comprehension of the text.

Practical Fever Nursing. By EDWARD G. REGISTER, M.D.
London: W. B. Saunders Company. 1907.

THE higher education of the nurse in all departments of her work is a sign of the times, and Professor Register, in this volume, seeks to supplement the ordinary text-books by a work solely devoted to the treatment of fever cases. The endeavour is a laudable one, and we are at one with the author when, in his prologue, he insists that a nurse should know something of the diseases she will be called upon to treat.

It is a matter of regret, then, that so many errors of omission and inappropriate information appear in the work, that it can hardly be recommended to the average nurse as a safe text-book. The language is not so simple and clear as the author indicates in the preface, or as his readers require, and some of the illustrations do not illustrate the text. As examples of these faults we may cite the omission to detail the preparations necessary for the use of the thermometer in the rectum, and the treatment of this instrument after use in that region. It is surely an anachronism to find the use of a sheet, moistened with an antiseptic, advised as a precaution against infection; and it is a pity that the illustrations of pulse-taking and of hypodermic injection are useless pictures which convey no information on the subjects indicated.

Then, too, we should hesitate to tell a nurse, as is stated on p. 32, *a propos* of the dosage of arsenic as a twenty-fourth to a twelfth of a grain, "to get the physiologic and therapeutic effect of the drug the dose can be increased to a much larger amount."

These extracts are typical of the book, and so, perhaps, enough has been said to indicate that, in our opinion, the objects for which it was originated have not been safely or satisfactorily attained.

Hay Fever, Hay Asthma: Its Causes, Diagnosis, and Treatment. By WILLIAM LLOYD, F.R.C.S. London: Henry J. Glaisher. 1907.

THIS interesting little handbook is based on the practical experience of the author. He reviews the various theories regarding the exciting cause of hay fever, its predisposing causes, the symptoms and the treatment, and appends a list of cases.

The author does not claim that it is an exhaustive treatise. Nevertheless, it is well written, and is an excellent review of the subject, and we have read it with pleasure.

Transactions of the American Surgical Association. Vol. XXIV. Edited by RICHARD H. HARTE, M.D. Philadelphia: W. J. Dornan. 1906.

THIS volume is concerned with the transactions of the Association at its meeting in 1906. A large proportion of the papers deal with abdominal surgery; but there is also a fair number on intracranial lesions. Tetanus, pulsating exophthalmos, and ectopia vesicæ are also considered.

These *Transactions* always contain valuable material, and this volume is no exception.

The Prophylaxis and Treatment of Internal Diseases. By F. FORCHHEIMER, M.D. London: Sidney Appleton. 1906.

THIS book, which its preface tells us, "embodies the results of thirty years' experience in hospital and private practice," deals rather with the use of drugs than with their therapeutic action. It is, therefore, of the nature of a dictionary of treatment, in which are described the various recognised methods of treatment for each individual disease. The author's attitude to his subject is explained in the introduction. He says, "The treatment of internal diseases is an art, and, like all arts, it is influenced by science, but, under all circumstances, it is an art practised by one human being upon another. This admitted, it follows that therapy can never be an exact science, for, aside from its being an art, the two human factors, the patient and the physician, will never be reduced to mathematical quantities. . . . The fact is often lost sight of, that not the worker in the laboratory but the clinician is the supreme judge in therapeutic matters. The application of the drug is in the hands of the physician, the *modus operandi* in those of the theorist: in other words, therapy is an art. As in all applied art, however, the best results are obtained by co-operation of the theorist and the practitioner." And this book embodies the author's clinical experience as regards the treatment of disease by drugs and other means. It is, therefore, written from the clinician's standpoint rather than from that of the therapeutist. From this point of view it is in every way satisfactory; but we do find that it adds much to what is contained in other books on treatment, unless it be that it is more recent, and, therefore, quite up to date. One special word of praise we must give to the admirable instruction regarding the food to be given in the various diseases. This is set down in detail, and with due regard to the digestibility and caloric value of the various articles of diet. The tables in the appendix, dealing with the composition of the various food materials in terms of proteid, fat, and carbohydrate, are most useful. These tables also contain the fuel value of each article of diet.

The book is well printed and well bound, and we have confidence in recommending it to our readers.

A Course of Lectures to Midwives and Maternity Nurses. By W. F. FOTHERGILL, M.A., B.Sc., M.D. With 67 Illustrations in the Text. Edinburgh and London: William Green & Sons. 1907.

THIS book is written in the form of lectures, and is designed specially for midwives and maternity nurses who are preparing for the examination of the Central Midwives Board of England. As Dr. Fothergill is one of the examiners to the Board, he knows what is required of the nurses coming before the Board. He has not attempted to give too much, a failing in many books intended for midwives. The information contained in the book is clearly and carefully put, so that any woman of ordinary intelligence should be able to grasp it.

In his opening lecture, on the chief duties of midwives, he explains the importance of cleanliness and asepsis, and he advises nurses to take hot baths very frequently, and, when possible, an extra one before going to a case. Undoubtedly this is good advice, but we are afraid there are few midwives who can follow it out. We think he should have laid more stress on the importance of thoroughly washing and scrubbing the hands and fore-arms, especially the finger nails, with soap and hot water, and then soaking them for some minutes in an antiseptic solution. To merely speak of washing the hands with soap and water, and then in an antiseptic solution, is not sufficient.

The book is divided into two parts. The first part deals with the anatomy of the pelvis and genital organs, pregnancy, the mechanism and management of normal labours, and the care of the mother and child in the puerperium. The second part deals with various forms of abnormal labour, including abortion, and also complications of pregnancy and the puerperium, and abnormalities of the child.

In the treatment of post-partum hæmorrhage he strongly advises compression of the aorta and raising the foot of the bed. He says, "No woman can die of bleeding from the uterus which occurs while the abdominal aorta is compressed sufficiently to destroy pulsation, the pelvis being at the same time raised a foot or more above the level of the head." That may be true, but we question the ability of any ordinary midwife to compress the aorta sufficiently to stop pulsation.

The book is well illustrated, and midwives will find it a most useful guide. There is an appendix and extracts from the rules framed by the Central Midwives Board.

Manual of Midwifery. By W. E. FOTHERGILL, M.A., B.Sc., M.D. With Double-Coloured Plate and 103 Illustrations in the Text. Fourth Edition. Edinburgh and London: William Green & Sons. 1907.

THE fact that this *Manual of Midwifery* has reached its fourth edition in a few years shows that it is a book of considerable merit. The author has thoroughly revised the whole text, several sections have been rewritten, and a number of new illustrations have been added. This edition has been brought well up to date.

Some sections of the book are extremely well written, but there are some parts, especially those dealing with treatment and operations, which are weak. It is quite evident that the author has not had a very wide practical experience in midwifery.

The teaching throughout is essentially that of the Edinburgh school, and the book will therefore be of the greatest use to the Edinburgh students, but students of other schools will also find it a very useful guide. We have confidence in recommending it to students.

Ophthalmia Neonatorum: with Special Reference to its Causation and Prevention. By SYDNEY STEPHENSON. London: George Pulman & Sons, Limited. 1907.

THIS is an important addition to British ophthalmic literature, and the work must rank as an authoritative treatise on a subject of great practical importance. The information brought together in this book has been derived from all parts of the world, and the statistics which the author gives cannot fail to be of great value.

A large part of the volume is devoted to a discussion of the etiology of the malady. The questions as to the manner and the nature of the infection are fully considered. As was to to be expected, the majority of cases have been proved to be due to the gonococcus. Other parasites, such as pneumococcus, the pneumobacillus, the bacillus coli, &c., have also been found to give rise to inflammatory attacks which cannot be differentiated, so far as the naked-eye appearances are concerned, from that due to the specific organism.

From a practical point of view the chapters on prevention and on treatment leave little to be desired. As was to be expected from the editor of the English edition of Darrier, the author is strongly in favour of the use of the organic preparations of silver.

In support of this he quotes many authors who may be taken to be to some extent also authorities. To our mind, however, it has been conclusively proved that these preparations have not the bactericidal power of silver nitrate. Indeed, some of them seem to be in this respect practically inert.

Silver nitrate is dangerous, for it is apt to kill the protecting epithelium. We are aware that some of the best results have been obtained by efficient irrigation with sterile water. A modern surgeon, when he finds septic matter in the abdomen, does not pour in chemicals, but simply proceeds to wash it out thoroughly. Perhaps before long the ophthalmic surgeon will follow a similar course.

We are not surprised that Mr. Stephenson's book has obtained the Middlemore Prize for 1907; it is in every respect excellent.

The Care of the Body. By FRANCIS CAVANAGH, M.D. London: Methuen & Co.

IN one of his contributions to the *Adventurer* Dr. Samuel Johnson said, "Of the innumerable books and pamphlets that have overflowed the nation scarce one has made any addition to real knowledge, or contained more than a transposition of common sentiment and a repetition of common phrases." The doughty lexicographer was a reviewer, and therefore was likely to know what he was writing about; and if he had got the benefit of a medical training, and been still living, he might have been induced to declare, "We already know sufficient about the care of the body, how it should be reared, clothed, and fed, and how physicians should treat their patients, and *vice versa.*"

The author of a medical book designed for lay reading is bound to travel a well-beaten road, confirming, it may be, the finger-posts and stone-marks laid down by previous workers, but presenting some facts and features of life, unique in his own eyes, and worthy to be chronicled and preserved. Every book gets some readers, and if the author has stamped his pages with his own mint, and pressed home his ideas of things, he will secure an audience ready to appreciate an honest, earnest effort to perpetuate and increase popular scientific instruction.

In the course of seventeen chapters Dr. Cavanagh discourses on the well-worn themes of sleep, bathing, exercise, athletics, clothing, the skin, hair, teeth, eyes, nose, ears, habits and positions of the body, and the functions and proper relation of the physician. Physicians, he argues, should be paid for keeping individuals well, just as medical officers of health are paid for their services in working for collective health.

Our author notices, not without epigram and humour, about five hundred topics, some of them not alluded to in other popular medical books. The reader will also meet with a sentence such as this—"Some of the most vigorous men I have met have never slept with their bedroom window open." This is a concession to fact, and we recollect that the late Dr. Inman, of Liverpool, said something similar; but as the reader goes on he will perceive from the context that Dr. Cavanagh is after all a mild medical heretic—he wishes sleepers to be neither chilled nor asphyxiated.

We understand that this volume is the first of a series of popular medical manuals which Dr. Saleeby is editing for the Messrs. Methuen. A book like this should prove useful among the middle and upper classes, whose guineas, through deficiency of physiological knowledge, are as ready to fall into the hands of boasting quacks as the humble half-crowns of the working classes.

The tastefulness of the publisher, printer, and binder has seconded the diligence and sprightly good sense of the author.

Diseases of the Lungs: A Practical Presentation of the Subject, for the Use of Students and Practitioners of Medicine. By ROBERT BABCOCK, A.M., M.D. London: Sidney Appleton. 1907.

WE have to cordially congratulate the author on the production of a volume which in every sense of the word is interesting and informative. His intention to make the work a practical presentation of the subject we consider has been accomplished with a very large measure of success. Indeed, the subject is treated in a practical manner *par excellence*, and the individuality of the author is seen in everything that is touched in the book. The volume is a bulky one, comprising 770 pages, but it cannot be said to be in the least degree diffuse, and the interest is maintained to the last chapter. Indeed, it would be well if all authors of medical publications took Dr. Babcock as a model in this respect, as there would be less desultory and more systematic reading of medical subjects.

The work is divided into three sections—I, Diseases of the Bronchi; II, Diseases of the Lungs; and III, Diseases of the Pleura. The first section includes bronchitis (acute, chronic, and plastic), with bronchiectasis, bronchial asthma, tracheal and bronchial stenosis, &c. The second section includes diseases of the parenchyma of the lungs, and also conditions such as atelectasis and morbid growths. The third section includes diseases of the pleura, together with hydrothorax, hæmothorax, and pneumothorax.

In dealing with the prognosis of pneumonia, so far as the bearing of a marked leucocytosis on it is concerned, the author is careful to observe that the degree of leucocytosis does not give much assistance in absolutely gauging it, although, on the whole, a pronounced leucocytosis is usually regarded as of favourable prognosis. He points out that both an intense infection and a vigorous reaction are necessary to the production of a marked leucocytosis. In spite of a very marked increase in the number of white cells, a patient may yet die from the intensity of the infection, and conversely an absence of leucocytosis may be due to the mildness of the attack, and the prognosis may be favourable.

The significance of leucocytosis in the prognosis of pneumonia is therefore secondary, and reliance must be placed on general symptoms, and particularly on the condition of the myocardium, in estimating the prognosis in any case. The pathology of the various conditions is treated in a very careful manner.

There are 12 coloured plates and 104 text-illustrations, all of which attain a high standard of excellence. The work is highly readable, and this quality does not detract in the slightest from its being full of interesting practical points both for the student and for the general practitioner.

Gall-stones and Diseases of the Bile-Ducts. By J. Bland-Sutton, F.R.C.S. With 47 Illustrations. London: James Nisbet & Co. 1907.

In this little book of some 230 pages the author reproduces a series of lectures delivered at the Middlesex Hospital. He thinks that while the subject of cholelithiasis is inadequately considered in the text-books, the English monographs are too bulky to be useful to students; the present volume is intended to strike the mean.

There is in the book much that is good; but we think that the average student will find it somewhat discursive. He, or anyone else who consults chapter xii, entitled "Differential Diagnosis of Cholelithiasis," will come away with the impression that there are many conditions very like one another so far as symptoms go; that there will be considerable difficulty in the way of coming to a correct conclusion in a case; and that he has not received very much help in the matter.

There are numerous references to literature; and these are given at the end of each chapter. The illustrations are quite up to the level of what we find in other monographs on the subject.

There are evidences of haste in the composition — *e.g.*, "The continuous flow of the pancreatic secretion erodes the surface of the stone like water will channel even granite" (p. 138).

This is a work which should prove of use to practitioners as well as students. Throughout the volume the author furnishes short accounts of cases illustrating the difficult parts of the subject. This is, apart from the actual handling of cases, perhaps the best way to learn about disease. There seems to us to be, however, a want of definiteness in the text, which may disappoint those who are seeking for help in the form of hard and fast pronouncements on difficult subjects.

On Treatment. By HARRY CAMPBELL, M.D. London: Baillière, Tindall & Cox. 1907.

WHILE we write this notice there are on the table an old volume entitled *The Poor Man's Physician,* by Petrus Hyspanus, and Dr. Harry Campbell's recent book. The difference between the two is like that between black and white—between nocturnal darkness and clear noonday. Lord Bacon's oft-quoted remark about medicine "advancing only in a circle" is not true, and was never more inapplicable than at the present time. Old books in a medical library may amuse their owner, but they will seldom profitably instruct him. Let a doctor read a chapter of Dr. Campbell's volume, and he will either acquire a new thought or be reminded of a truth that ought to be preserved from the wreck of the old medical writings.

Those who open the pages of *Treatment* expecting every disease to be labelled and assorted with a prescription will be disappointed. The book is a chatty summary of the principles of medicine, with a slight bias to empiricism, which renders the perusal more piquant and absorbing.

In a work of this kind there is a tendency to repetition, but this is never annoying. Thirty-seven chapters constitute the 420 pages, and in them are to be found shrewd remarks on the education of the physician and his demeanour to the patient, the worth of consultations, treatment by suggestion, and the whims and changes of faddists. Further on, the chapters devoted to exercise, clothing, rest, dieting, alimentation, and how to keep well, are sometimes amusing and always edifying. The deficient mastication and the bolting of food in this age of hurry are suitably condemned by this practical physician.

The book is well printed, and neatly bound in green cloth, both being pleasant to the eyes.

We thank Dr. Campbell for some pleasant half hours with his volume, when wanting something more professional and more permanent than the evening newspaper.

The Essential Similarity of Innocent and Malignant Tumours: A Study of Tumour-growth. By CHARLES W. CATHCART, M.B., F.R.C.S. With 86 Illustrations, for the most part Photographic Reproductions from Specimens. Bristol: John Wright & Co.; London: Simpkin, Marshall, Hamilton, Kent & Co., Limited. 1907.

IT was while engaged as conservator of the Museum of the Royal College of Surgeons of Edinburgh, some ten years ago, in preparing a catalogue of specimens in the museum, that the author's attention was directed to a difficulty in classifying tumours. The difficulty consisted in separating innocent from malignant new-growths. The author found that after arranging tumour-specimens in groups corresponding to organs or tissues, it was easy to separate typically malignant from typically innocent growths. A large number, however, there were which did not belong properly to either sub-group, but which from their characters had to be looked on as intermediate forms. From a study of specimens of tumours occurring in the bones it was seen that there were gradations between the extremes of innocency and malignancy. "In other words, the two classes of tumour are not distinct, but differ only in degree."

The subject is considered under three headings—(1) Gradation in character from innocent to malignant; (2) Transformation, which may sometimes be observed in the same tumour; (3) Combination of characters.

1. This aspect is illustrated by specimens, from different individuals, of cartilaginous, fibro-osseous, and medullary tumours. Ten cases of chondroma are given, ranging from

simple to malignant. In the intermediate forms there were such characters as rapid growth, local recurrence, and slow growth becoming rapid, with sapping of strength. The fibro-osseous series (16 cases) is arranged in the same way. Beginning with osseous tumours which showed no malignancy, the series terminates with cases of periosteal sarcoma. Similarly, 14 cases of medullary tumour are given, showing gradation into malignancy. The accounts of these cases are followed by remarks, in which the writer cites authorities in support of the view of gradation in malignancy. The citations, unlike the cases to which the auther has confined himself, deal with tumours in many different regions—mamma, testicle, bladder, &c.

2. Under this heading are placed instances of transformation of innocent into malignant tumours, and of co-existence of malignant with simple growths. Examples are given in cases of moles, warts, sebaceous cysts, &c.

3. In this class are cases in which innocent tumours have given rise to secondary deposits, either of same or of malignant nature. As might have been expected, the examples are chiefly ovarian cystomas; but cases of thyroid metastases are also quoted.

The author recommends that while the main groups of tumours may be framed on a *structural* basis, subdivisions should be based on the *clinical* characters, *i.e.*, innocent, malignant, and intermediate. Keeping this in view, the surgeon will incline to early operation even in tumours which may appear to be innocent.

This is a most interesting and suggestive essay, and we congratulate Mr. Cathcart on the way he has set forth his facts. The volume is well worth reading.

The Diagnosis and Treatment of Intussusception. By CHARLES P. B. CLUBBE. Edinburgh: Young J. Pentland. 1907.

IN this slim volume Mr. Clubbe gives us an account of intussusception, based entirely on his own experience of 144 cases during the last thirteen years. There are chapters on the etiology, varieties, symptoms, examination of patients, treatment, and after-treatment. It is easy to see, on reading the text, that it is written by a practical man.

The condition is one which necessarily comes under the notice first of general practitioners; and by them valuable time is often lost before surgical advice is sought. A consideration of Mr. Clubbe's essay will do much to dispel doubts in the diagnosis of these cases. He modestly recommends it to young practitioners; we feel sure that no one can read the volume without profit.

Hygiene and Public Health. By LOUIS C. PARKES, M.D., D.P.H., and HENRY R. KENWOOD, M.B., D.P.H. London: H. K. Lewis. 1907.

THIS is the third edition under the joint editorship of what is the development of the manual of the first-named author.

Few changes, relatively speaking, have been introduced, the main, perhaps, being that the size of the page has been somewhat enlarged to prevent increase in the bulk of the book, which is still of a handy size.

New matter has been introduced here and there, however, and appropriate abbreviations made in other parts of the text of the former edition, mostly with advantage to the reader. We should like to sound a note of warning to the authors not to attempt to accomplish too much in one volume. While, undoubtedly, it is possible in fifty pages of small print to concentrate no small amount of information on sanitary law and administration, it cannot be pretended that a sufficient all-round conception can in that space be given. Many improvements have been made in the book since we formerly reviewed it, and we think it now to be one of the best books for students desiring to proceed towards a qualification in sanitary science or public health.

A few trifling errors have not been noticed in reading proofs. For example, on p. 207 we find Co_2 for CO_2, and on p. 343 "Friebank" for Freibank. We heartily commend the book.

Lessons in Disinfection and Sterilisation. By F. W. ANDREWES, M.A., M.D. Second Edition. London: J. & A. Churchill. 1907.

IN the short time that has elapsed since the first appearance of this most useful book, there have been but few advances in that section of bacteriology which deals with practical disinfection. The standardisation of antiseptics, introduced by

Rideal and Walker, is new, and has brought forth criticisms both of phenol as a standard and of the methods of testing. This subject is included in the new edition, and the author, after describing various methods, takes up the sensible position that a standard of efficiency is a good thing, though the methods at present employed may not be quite satisfactory.

The surgical section is somewhat meagre, particularly in the matter of efficiency of dressings, the evaporation of moisture from them, and the other details which appeal to the surgeon and the surgical nurse. The book still maintains its characteristic elementary nature, and is eminently fitted to carry the student by easy stages to a clear idea of the subject. Technical words and processes are explained as they occur in the text; and the practical exercises are well devised, and so simple that they are readily understood.

Of convenient size, well printed, and furnished with a fairly complete index, this new edition is worthy of recommendation to all whose work includes disinfection and sterilisation.

Physical Diagnosis. By EGBERT LE FEVRE, M.D. Second Edition. London: Hodder & Stoughton.

"THIS new edition has been thoroughly revised, some of the sections have been entirely rewritten, the series of illustrations has been enriched, and attention has been called to recent modifications in methods of examination." These words from the preface of the book give a fair description of the new edition. And the work as we now have it before us is one of the most satisfactory books on the physical examination of the thoracic and abdominal organs that we have read for some time. Special attention is paid to the physics of physical signs, and an attempt is made to refer any variation from the normal signs to the morbid lesions that may be causing them. One cannot always agree with Dr. le Fevre in his explanation of the production of the respiratory murmur and its variations and other such like matters, but at the same time one recognises that his point of view is always well considered, and most often well worthy of consideration.

The text is amply supplied with illustrations, and these add greatly to the elucidation of the subject matter.

We have pleasure in recommending this book to our readers.

ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

MEDICINE.

The Epidemiology of Acute Poliomyelitis. By L. Emmett Holt, LL.D., M.D., and Frederic H. Bartlett, M.D. (*Amer. Jour. of Med. Sciences*, May, 1908).—The authors have collected and studied reports of thirty-five epidemics of poliomyelitis prior to the year 1907. As the New York epidemic of 1907 is at present undergoing investigation by two of the medical societies, they have not attempted to include it. Full details are given, and the following conclusions have been come to by the authors:—The occurrence of epidemics, and the relation of certain groups of cases to one another in these epidemics, place beyond question the statement that acute poliomyelitis is an infectious disease. The disease is communicable, although only to a very slight degree, one of the most striking facts being the development of the second cases within ten days after possible exposure.

—Arch. W. Harrington.

Perforation of the Gall-Bladder during Typhoid Fever; Cholecystectomy; Recovery: with an Analysis of Twenty-one Operations on the Gall-Bladder during Typhoid Fever. By Astley Paston Cooper Ashhurst, M.D. (*Amer. Jour. of Med. Sciences*, April, 1908).—The author reports two cases of perforation of the gall-bladder in typhoid fever, both being operated upon. The first case, a boy of 12 years, complained of pain in the abdomen on the thirty-second day of the disease. There was no sudden onset of pain. There was some rigidity of the right rectus, and tenderness over the right rectus at the level of the umbilicus. Leucocytes numbered 10,200 per c.mm. Three hours later, pain, tenderness and rigidity had increased, and there was more distension. Temperature had fallen from 104·4° F. to 102·4° F., but there was practically no change in the pulse-rate. The leucocyte count had fallen to 6,200. A diagnosis of probable intestinal perforation was made, and exploratory laparotomy was performed five hours after the onset of symptoms. No intestinal perforation was found, but there was general peritonitis with considerable bile-stained fluid. Patient's condition did not permit of further procedure, and he died twenty hours afterwards. *Post-mortem*, a perforation of the gall-bladder was found.

The second patient, a man of 20 years, was operated on by the author. His temperature became normal on the thirty-seventh day, but began to rise irregularly on the thirty-ninth and fortieth days. His pulse varied from 68 to 80 per minute. On the forty-first day the temperature reached over 104° F., and the pulse numbered 120. Slight tenderness was present beneath the right costal margin. The leucocytes numbered 24,400 per c.mm. On the forty-second day, at 4 A.M., temperature was 100·2° F.; pulse, 136; respirations, 28. Pain and tenderness were severe in the right upper abdominal quadrant, and some green fluid had been vomited. There was rigidity of the entire right half of the abdomen, but no distension or evidence of free fluid. There was no Hippocratic facies, but rather a general weakening of all the features. At the operation, four hours later, the transverse colon was adherent to the liver. On breaking down the adhesions, which were quite recent, 4 or 5 oz. of thick inodorous milky pus welled up. A culture from this gave a pure growth of bacillus typhosus. A large ragged perforation was present in the lower and inner wall of the gall-bladder. It measured one inch and a quarter by one inch and a half. The gall-bladder was removed. Recovery was uneventful, and the patient was dismissed two months after operation.

The author concludes his paper by an analysis of nineteen other operations done during the course of typhoid fever for lesions of the gall-bladder.

—ARCH. W. HARRINGTON.

SURGERY.

Experimental Researches on the Injection of Gas into the Veins. By MM. Pierre Delbet and Mocquot, of Paris (*Revue de Chirurgie*, March, 1908).—The experiments described in this most interesting and suggestive article were undertaken as a preliminary to the work which one of the authors proposed to do on the subject of venous anastomosis.

It is impossible to effect a venous anastomosis without a certain quantity of air finding its way into the vessels operated on. The purpose of the investigation was to find out whether the small quantity of gas introduced was likely to produce any harmful result. Literature on the subject was full of contradictory reports, and gave the authors no certain guidance.

Most experimenters have directed their researches towards discovering the quantity of air which, introduced into the veins, can kill. Air itself is not a poison, and to talk of the "toxic quantity" is to put the problem in a wrong way altogether. Air introduced into the veins can only have a mechanical action when it remains free in the vessels. Those constituents which are dissolved in the blood plasma, or taken up by the hæmoglobin of the red corpuscles, produce no ill effect. No ill effect is caused in the segment of the vein to which free gas is limited, and it is only if the gas reaches the heart that ill results follow.

From these theoretical considerations the authors were led to ask two questions. Will a large quantity of air, if injected very slowly into a vein so as to allow of its dissolution and absorption so that none arrives at the heart in a free state, produce any ill effect? Is the important factor not really the speed with which the air is injected into the vein?

The problem really came to be, what is the toxic speed? and the further conditions laid down were to have the gas as nearly as possible always at the same temperature, and to make the injection far away from the heart, so that the gas must come into contact with a great quantity of blood before it reaches the heart.

After some experiments an apparatus was devised from which the gas could be injected into the veins continuously at a regular pressure. Most of the experiments were carried out on anæsthetised animals.

An endeavour was made to discover roughly, without any mathematical accuracy, what was the toxic speed per minute, and per kilogram of body weight of the animal experimented on, the body weight being taken as a standard rather than the probable weight of the blood.

Eight experiments were carried out. The speed of injection per minute and per kilogram of body weight was carefully noted, and from the first four experiments the following conclusions were drawn:—

1. Casualties do not result from the quantity of air introduced.
2. Casualties are influenced by the body weight of the animal. The lighter the animal, the more dangerous is the experiment.
3. The more rapidly the injection is made, the greater is the danger.

Roughly speaking, the authors believe that in the dog, when the injection is made into the saphenous vein, the value of the co-efficient of danger (*i.e.*, the toxic speed) is between 5 and 6 c.c. per kilogram and per minute.

The co-efficient is obtained by dividing the number of cubic centimetres of gas injected by the weight of the animal in kilograms, multiplied by the number of minutes spent in injecting the gas.

If the injection be made into any of the veins of the neck, the co-efficient of danger is much decreased. This was the conclusion drawn from the next three experiments. The amount of air indrawn through an open vein in the neck during one strong inspiration easily produces death.

From these experiments the conclusion was drawn that it must be possible to inject in large quantities any non-toxic gas which was readily soluble in blood plasma, and was taken up by the red corpuscles. The injection of oxygen was accordingly tried, and the following experiment was carried out:—

Into the saphenous vein of an anæsthetised dog, weighing 8 kilograms, 200 c.c. of oxygen were injected in twenty minutes, without causing any disturbance. Five minutes later 800 c.c. were injected in ten minutes. The only result was a marked increase in the number of the respirations, which reached 86 per minute (normal, 24 per minute), but on recovery from the anæsthetic the dog was well, and no bad effects resulted during the following days.

With air injected at this speed the dog would doubtless have died, the toxic speed having been exceeded.

It seems possible, then, to inject without danger larger quantities of oxygen. The respiratory movements are always greatly increased when the toxic speed is neared. They become more rapid and deeper. Why? The determination of this question is very difficult, and the authors do not endeavour to solve it, only suggesting that a strong effort is being thus made by the lungs to establish equilibrium, the state of the alveolar spaces being really one of inversion. They further suggest that by the injection of some vapour which produces an action on the nervous system which can be gauged, some conclusions can be drawn as to the measure in which the lungs play the part of regulator. It is the respiration which ceases first when the toxic speed is exceeded.

Other casualties observed have been convulsions and temporary paraplegia. All the casualties observed—convulsions, paraplegia, and death—are held to be due to the presence of free gas in the vascular system, and this conclusion is in accord with other well known physiological experiments.

Is the use of intravenous injections of gas of any practical value? An endeavour to obtain anæsthesia by injecting a mixture of chloroform vapour and oxygen was made, but without success.

Gaetner (Soc. Imperio-Royale de Vienne, May, 1902) has already advised the injection of oxygen intravenously in cases of asphyxia from toxic gases, and in cases of asphyxia neonatorum.

Mariani, in July, 1902, seems to have made the first therapeutic injection of oxygen, in a case of phthisis; the immediate result was good, but the patient died on the following day.

Neudorfer carried out the procedure in a case of cyanosis and threatened asphyxia, due to an intrathoracic goitre. The immediate result was successful, and a repeated injection later on had the same success. The patient died several days later from cardiac failure.

It seems clear that in certain cases the injection of oxygen might form a valuable therapeutic measure, *e.g.*, in cases of mechanical asphyxia (inoperable, or till operation can be effected), and those asphyxias caused by toxic gases, or in any other grave forms of intoxication.

Could this measure not be tried in those cases of pneumonia where the use of an oxygen-inhaling apparatus is often so futile? Or could not oxygenated saline solution be given intravenously? Would it not even be useful to try subcutaneous injections of oxygen? Further, in cases of shock and collapse, would not the oxygenation of saline solution be an advantage?

—W. Rankin.

An Analysis of 274 Additional Cases of Removal of Goitre by Operation. By James Berry, F.R.C.S. (*Proceedings of the*

Royal Society of Medicine, Surgical Section, 12th November, 1907).—This communication is one of great interest, is full of practical points and is most instructive as a demonstration of method in the examination of cases, and in their ultimate classification.

With regard to the sex of the patients, the females preponderate in the proportion of seven to one. The majority of the cases came from country districts, but while Mr. Berry admits the possibility of impure water supply as a factor in introducing the "goitre producing poison," he recognises that in many cases drinking water has little or nothing to do with the causation of goitre.

Except in cases of urgency, operation should be withheld till the administration of internal remedies has been given a fair trial, especially in cases of parenchymatous goitre.

The remedies mentioned are iodine, potassium iodide, thyroid extract, and arsenic. No specific mention is made of any intestinal antiseptic. The chief reasons for operation are classified as follows:—

Dyspnœa,	177 cases.
Deformity,	33 ,,
Discomfort or deformity, mostly with minor degrees of dyspnœa,	47 ,,
Malignancy, papilliferous tumours, &c.,	10 ,,
Suspected malignancy,	3 ,,
Dysphagia,	1 ,,
Increasing size,	3 ,,
	274 cases.

Dyspnœa is recognised as the prime indication for operation, and Mr. Berry expresses the opinion that dyspnœa is always caused by direct pressure upon the trachea, and has nothing to do with irritation of the recurrent nerves.

The nature of the cases is indicated thus:—

Encapsuled—	
Solid adenoma,	106 cases.
Cystic adenoma,	94 ,,
Pure cyst,	2 ,,
Hydatid cyst,	1 ,,
	203 cases.
Non-encapsuled—	
Parenchymatous,	26 cases.
Adeno-parenchymatous,	28 ,,
Papilliferous,	10 ,,
Malignant,	7 ,,
	71 cases.

The only term requiring explanation is "pure cyst," which Mr. Berry describes as a cyst with a smooth inner surface like a hydrocele, one in which no trace of adenomatous tissue can be found adhering to the inner wall. This differentiates it from the ordinary cystic tumour, which he has shown to be constantly derived from a solid adenomata.

The site of the tumour, whether completely above the level of the episternal notch, or whether intrathoracic is made use of in the description of the cases, and the great danger of the latter cases, as well as of those whose hæmorrhage occurs into a cyst, or into the tissue of a softer adenoma, is clearly illustrated in the series described.

The nature of the operation is classified under two heads—(1) Enucleation; (2) Extirpation.

In all but five cases, chloroform anæsthesia was used. A minimum amount was given, and only light anæsthesia was sought for, so light that towards the end of the operation retching could always be produced, so as to test the efficacy of the hæmostasis.

The incision in the great majority of cases was a curved transverse one, placed low down in the neck. Fine silk was used for all ligatures and sutures except those of the skin.

Towards the end of the series, drainage was employed in over 90 per cent of the cases. The majority of the patients were out of bed on the evening of the day after operation, and most were quite well in ten days.

No tetany or myxœdema followed in any case. The mortality was 3 deaths in 267 non-malignant cases, while out of 7 malignant cases, 3 died, and the after-history of the remaining 4 forms but a gloomy record.

In the discussion which followed, Sir Victor Horsley called attention to the fact that most of the posteriorly situated adenomata were often pure parathyroidal adenomata, and Mr. Herbert Paterson spoke of the value of ether given by the open method in the anæsthetic in thyroid operations. He had seen the method used successfully in America.

There seems little doubt that general anæsthesia can be employed in these cases with safety when due precautions are taken.—W. Rankin.

A Case of Complete Gastrectomy. By B. G. A. Moynihan (*Proceedings of the Royal Society of Medicine*, Surgical Section, 10th December, 1907).—The case was one in which there had been gradually increasing trouble with the stomach over a period of two years. Pain coming on one hour after the ingestion of food and vomiting were the most marked symptoms, while loss of weight was a feature of the case. On admission only three or four mouthfuls of fluid could be swallowed at a time without producing a feeling of discomfort and leading to vomiting; no solids could be taken. In all, patient took about 30 or 40 oz. of fluid daily.

Abdominal examination.—Palpation revealed nothing abnormal. On distending the stomach with a small quantity of gas a swelling about the size of a billiard ball presented in the region of the left hypochondrium. The tumour was well circumscribed, and no other part of the stomach was distended. On washing out the stomach, only a portion of the fluid was returned through the tube, and these two facts led to a provisional diagnosis of hour-glass stomach. The stomach contents after a test meal showed chemically no free HCl. When the case was demonstrated the possibility of its turning out an example of "leather bottle" stomach, the "linitis plastica" of Brinton was mentioned.

When the abdomen was opened, considerable difficulty was experienced in exposing the stomach. It was found to be small in size, with walls of great thickness and solidity, resembling, indeed a very large uterus, and having an insignificant cavity within it. There were few enlarged glands along the curvatures. The stomach was large towards the cardiac end, having a shape something like a Florence flask.

Gastro-enterostomy being out of the question, the alternatives were gastrectomy or jejunostomy. After deliberation Mr. Moynihan decided to remove the whole stomach.

The abdominal wound having been enlarged, and the area of operation packed off, the operator proceeded to cut and tie all the vessels supplying the stomach, to ligature the gastro-hepatic and gastro-colic omenta, and to divide the duodenum about 1 inch beyond the pylorus. Care was taken to get away with the omentum all the enlarged glands. The whole stomach being now free hung pendulous from the œsophagus.

The next step, and the most important and difficult of all, was the anastomosis of the œsophagus to the jejunum. The first proceeding was to draw a loop through an avascular area of the transverse mesocolon, as is done in the usual posterior gastro-enterostomy operation. The point selected for anastomosis was about 8 inches from the duodeno-jejunal flexure. A piece of it, about 2½ inches in length, was laid transversely along a line immediately behind the œsophagus. As it lay there transversely, the right leaf posterior, its upper end was towards the left, its lower to the right. First of all eight light interrupted sutures were introduced, and as they were being introduced the œsophagus was made to present and was well exposed by a forcible and continuous downward traction upon the stomach, the stomach, wrapped in a hot gauze swab being thus most efficiently used as an instrument of traction upon the œsophagus. The help derived from this manœuvre was exceedingly great, and made the operation "a feat of comparatively easy accomplishment." In front of the line of interrupted sutures a continuous suture was now introduced, and this gave a seemingly quite secure attachment of the œsophagus to the jejunum on its posterior aspect.

Small openings were then made into the œsophagus and into the jejunum in front of the line of continuous suture, and a continuous through and through suture was now begun. After a few stitches were inserted both openings were enlarged a little and a few more stitches were then inserted, this alteration of enlarging the opening and stitching being continued till the stomach was severed from the œsophagus, when a very few more stitches completed the round. The stomach was thus all the time retained in a tractor.

Finally, the outer continuous suture previously laid aside was resumed and carried round to its starting point, where it was tied and cut short.

The suture lines were now complete, and all that remained was to introduce a few anterior anchor sutures, fixing the jejunum and œsophagus to the diaphragm.

The great omentum was turned upwards over the operation area and the abdomen closed.

The operation was borne well.

Continuous administration of saline fluid by the rectum was commenced as soon as the patient was put back to bed. In the first twenty-four hours 9 pints was taken; in the second twenty-four hours, 6 pints. There was little pain, and no complaint of thirst. Patient was kept in the dorsal decubitus with the head propped well forward.

On the third day two teaspoonfuls of water was given every half hour by the mouth; on the fourth day the quantity was increased to 2 oz. every half hour; on the fifth day 5 oz. were given hourly, and water, peptonised milk, and albumen water were given in succession; on the eleventh day beef-tea and Benger's food were given; on the fourteenth day milk pudding; on the eighteenth day bread and butter. During the third he week expressed himself as feeling hungry.

He was in bed eighteen days, and on the twenty-second day was sent to a convalescent hospital. He gained 10 lb. during his stay in hospital, and two months later he had gained 16 lb. more, and was able to eat all foods.

This is the second case of complete gastrectomy reported by Mr. Moynihan, and he considers the procedure of using the stomach as an instrument of traction an advance of the greatest importance in the techniqne of the operation.—W. RANKIN.

DISEASES OF THE EAR.

The Treatment of Lupus and Tubercular Diseases of the Ear, Nose, and Throat by Inoculation. By Dr. Hunter F. Tod and Dr. G. T. Western (*The Practitioner*, May, 1908).—Details are here given of three cases of tubercular disease of the ear, and six cases where the nose and throat were affected by lupus. They were treated at the out-patient department, which rendered the regular examination of the blood impossible, and they are reported with the object of showing the improvement which followed the treatment of them by inoculation.

Of the three ear cases, the first may be given in detail, as the method of treatment and the results were similar in all. The patient was a girl of

9 months, who had a middle-ear suppuration dating from the third month after birth. There was offensive discharge, the tympanic cavity was filled with friable granulations, and carious bone could be felt in the region of the attic and antrum.

The pre-auricular and upper cervical glands were enlarged, and two had broken down and were discharging through sinuses in the neck. Diagnosis was tuberculous disease of the middle ear. The granulations were removed from the ear by curette, and the sinuses were at the same time freely scraped. Microscopic examination of the scrapings showed giant-celled formation, but no tubercle bacilli were found. The opsonic index was then taken to determine whether the lesion of the middle ear, together with the secondary involvement of the lymphatic glands, was due to a primary infection with the tubercle bacillus, or a pyogenic micro-organism. Pus cultures taken from the sinuses in the neck grew staphylococcus aureus in pure culture.

The indices arrived at were tubercle bacillus, 0·56; staphylococcus aureus, 1·0. Treatment by tubercle vaccine was therefore indicated, and a first injection of $\frac{1}{15000}$ mgr. of tuberculin (T.R.) was given. This was followed by a rise in the index to 1·03; in ten days, however, it had again fallen to 0·5, when the same dose was repeated, and was followed by a rise of 1·2 Four weeks later the discharge had diminished, and the glands had become more discrete and movable. After two months' treatment the discharge from the ear had ceased, but the sinuses still discharged. A staphylococcus vaccine was then used alternately with tuberculin, with a result that the sinuses completely closed and the enlargement of the glands rapidly disappeared.

—WALKER DOWNIE.

The Post-Mortem Statistics of Middle-Ear Disease in Young Children.—The middle ears of 50 children, whose ages ranged from 12 days to 4 years, were examined in the *post-mortem* room by Miller (*British Medical Journal*, 21st December, 1907); 37 of these showed pus in one or both middle ears, in 20 both ears were affected, in 11 the left only, and in 6 the right only.

Although cultural methods were not adopted in all the cases, a Gram-positive lanceolate and capsulated diplococcus was found in practically all the films examined. Further, in 3 cases of acute miliary tuberculosis, tubercular bacilli were found along with diplococci.

Preysing examined 100 children, whose ages varied from 1 day up to 3 years, and who had died from various causes; 81 of these showed middle-ear disease, bilateral in 73. The most common organism present was the pneumococcus. Out of 121 positive results, Preysing found the pneumococcus present in 112. This predominance of the pneumococcus does not appear to obtain when all ages are included.

Supfle states that in a series of cases of middle-ear disease examined clinically the streptococcus pyogenes was found in 50 per cent of all cases, but only in 30 per cent of cases under 10 years, whereas the pneumococcus was found in 18 per cent of all cases, and in 85·7 per cent of cases under 10 years of age.

We may therefore assume that, although not the commonest organism in otitis media of adults, the pneumococcus predominates in children, and that this predominance becomes more marked the younger the age limits selected.

Meningitis was found in 10 of the 50 cases; 8 of these showed middle-ear suppuration. Four of the 10 were cases of pneumococcal cerebro spinal meningitis, and in all these cases suppurative otitis media existed; 1 was a case of tubercular meningitis. There were no cases of sinus thrombosis or of cerebral abscess.

Four out of 5 cases certified as dying of enteritis or colitis had otitis media.

Broncho-pneumonia was present in 74 per cent of the cases, and in 78·3 per cent of cases with middle-ear disease.

Stacey Wilson lays stress on the connection between pneumonia and otitis media, and Preysing found pneumonia present in almost all his cases.

The writer thinks that the suppurative otitis media probably precedes the pneumonia, the lung being only affected afterwards by the diplococcus, which has acquired a heightened virulence by its residence in the tympanic cavity.
—William Walls Christie.

Acute Labyrinthitis. By G. Alexander, Vienna (*Archives Internationales de Laryngologie, d'Otologie, et de Rhinologie*, January-February, 1908).—At a time when infections of the internal ear are claiming the attention of otologists, this contribution by a keen observer to the clinical study of disease of the static labyrinth is of great interest. The writer first gives the details of four cases, and then discusses the questions which arise from their examination.

All were the subjects of chronic middle-ear suppuration, and on all the radical mastoid operation was performed. Previous to operation the tests showed that the deafness was, in the main, of the middle ear variety. The ears responded normally to thermic and galvanic stimulation. In none of the cases was any fistulous opening found at the operation leading to the labyrinth, though in one it was remarked that the bone was congested in the region of the external canal. At a period varing from twenty-four hours to ten days after the operation in the different cases, symptoms of labyrinthine involvement, nystagmus, vertigo, and vomiting appeared, together with more or less marked signs of meningeal irritation, rise of temperature, hyperæsthesia, Kernig's sign.

Alexander divides acute labyrinthitis into three stages:—(1) Inflammatory irritation, (2) inflammatory paralysis, (3) re-establishment of function. He gives in detail the examination of the nystagmus in each of these stages. In (1) it is towards the side of the aural disease; in (2) towards the healthy side, and markedly so at the height of the paralytic stage; in (3) towards the diseased side again, and then disappearance.

In all the cases, after the labyrinthine inflammation had lasted about a week it completely passed off, the labyrinth again responding normally to excitation, and the hearing returning at least to what it was previous to operation.

The condition might be termed a serous labyrinthitis, and is comparable to serous meningitis. In traumatic labyrinthitis from injury during the mastoid operation the onset of this complication is observed immediately the patient comes out of chloroform, *i.e.*, there will be spontaneous nystagmus towards the diseased side. In purulent labyrinthitis the phenomena will last longer, and the labyrinth will not recover its functions. Even in acute labyrinthitis the inflammatory condition may be localised to different parts of the internal ear.

From these cases we can draw the lesson that operation on the labyrinth is not by any means always indicated when labyrinthine disturbances manifest themselves. In view of the great dangers attending the opening up of the internal ear in purulent conditions, it is well this should be kept in mind, though it is evident a very careful consideration should be given to all such cases.—W. S. Syme.

Clinical Experience in the Treatment of Acute Suppuration of the Middle Ear by Bier's Method. By Dr. F. Isemer (*Arch. f. Ohrenheilkunde*, March, 1908).—In this paper the writer gives his experience in nine cases of Bier's method of treating acute suppurative inflammation of the middle ear. In several of these the mastoid antrum and cells were affected.

In the earlier part of the paper the writer refers to the experience of other aurists in the matter, pointing out that this method of treatment is very highly recommended by Eschweiler.

The high encomiums of some writers are not endorsed by Isemer, but he admits that the method may have a remarkable effect in the way of relieving the pain. This, however, he regards as unfortunate rather than desirable, and describes one case in which it masked the course of the disease so effectually that the patient was thought to be progressing very favourably for some days, when the temperature rose rapidly, intense pain occurred, associated with rigors and other symptoms, which demanded the performance of the mastoid operation. Other cases are recorded in detail by the writer. In all cases, paracentesis was performed before beginning the Bier's treatment, and it is, therefore, difficult to ascertain the extent to which the subsequent recoveries are to be attributed to the special treatment. From careful perusal of the cases, the course which they run does not seem to be very different from that usually obtained in the ordinary treatment of acute middle-ear suppuration. There are, however, two cases out of the nine in which Bier's method seems to have had the same disastrous effects as in that described above. In these, high fevers, rigors, &c., called for the mastoid operation, and when this was being performed it was found that the roof of the antrum was destroyed as well as the posterior wall of the cavity, so that the dura mater and lateral sinuses were exposed, and were surrounded by pus and granulation tissue.

The history of other two of the nine cases revealed an interesting fact. In these, while the Bier's treatment was being carried out, subperiosteal abscesses formed over the outer surface of the mastoid process, but during the formation of these abscesses there was entire absence of pain.

Interesting facts have been ascertained by the writer in regard to the effect of Bier's method of treatment of the disease when the latter is due to different micro-organisms. Thus, he finds that, when the diplococcus or streptococcus are present, this method of treatment is distinctly dangerous, whereas when only the staphylococcus is found it may be of value.

The conclusions drawn by the writer are, that Bier's method of treatment is only applicable to cases of acute suppurative middle-ear disease when the staphylococcus is the offending organism. Further, the treatment must be carried out under constant medical supervision; that is to say, it must be done in hospital. If there is any value in the treatment at all, it lies in the relief of pain, and this may in certain cases prove to be a misfortune by masking dangerous changes in the deeper parts.—ALBERT A. GRAY.

The Value of Bacteriological Investigations in Otology, with special reference to Blood Cultures. By E. Libman, M.D. (*Archives of Otology*, February, 1908).—A brief preliminary review of the work of previous investigators is given, and attention drawn to the prominent place assigned to the pneumococcus by earlier workers, contrasted with more recent investigations, such as those by Suepfle, which place the streptococcus first in frequency, the latter being present in 60 per cent, while the former, in only 15 per cent, takes second place. The presence of the streptococcus mucosus, an organism which is receiving year by year more attention, is recorded by him as being found in 14 per cent. Wittmanck is quoted as having observed that in 55 cases examined bacteriologically by him, the streptococcus was present in 24, the streptococcus mucosus in 21, and the pneumococcus in 10; also, that in 75 per cent of the cases of ear disease associated with the streptococcus mucosus there developed mastoid complications. The author's own investigations are grouped into two series—one extending up to April, 1904, comprising 89 examinations, and the other from April, 1904, to November, 1907, comprising 141 examinations. The results of the latter series only are given, and they agree with those of other investigations in placing the streptococcus first in frequency. They are as follows—the streptococcus in 52 per cent, the streptococcus mucosus in 8 per cent, and the pneumococcus in 6·4 per cent. Staphylococci were only present in 5 per cent of the 141 examinations. In intracranial complications, the streptococcus was found three times in 5 cases of brain abscess; ten times in 13 cases of sinus thrombosis (in the remaining 3 no organisms were found);

and thirteen times in 25 cases of meningitis. The author emphasises the importance of a more careful differentiation of the pneumococcus and streptococcus, and quotes Buerger and Ryttenberg, who found that "the pneumococcus can be so changed in the human body that it can be differentiated from the streptococcus only with great care, or not at all." The author remarks upon the great frequency with which the streptococcus is present in cases of sinus thrombosis, and how rarely, if ever, does a pneumococcic infection of the sinus occur.

The author has made 75 blood cultures in 55 cases, mostly of intracranial complications, and in 22 of them (almost entirely cases of sinus disease or meningitis) organisms were found in the blood (positive result). In 26 cases of sinus thrombosis examined, a positive result was obtained in 9 cases, and in all of them streptococcus was the organism. The author formulates several deductions which he has arrived at as the result of this series of blood examinations, and the following are a few of the more important:—(1) A positive streptococcus blood culture nearly always points to the presence of sinus thrombosis; (2) the continued presence of streptococci in the blood, after the sigmoid sinus has been explored, may be regarded as an indication for tying the internal jugular vein; (3) if, after ligation of the internal jugular vein, streptococci are no longer found in the blood, the general invasion has been stopped; (4) in some doubtful cases, where there is evidence only of a past suppuration in the ears, and no other focus found from which bacteria could gain access to the blood, the discovery of streptococci in the blood would indicate the desirability of exploring the mastoid and sigmoid sinus. Four cases of this type are recorded by the author, and in three thrombosis of the sigmoid sinus was found, while in the fourth disease of the mastoid.—J. STODDART BARR.

Thiosinamine in the Treatment of Deafness (*Folia Therapeutica*, April, 1908).—In 1902, injections of an alcoholic solution of thiosinamine were used at St. Antoine Hospital, Paris, in the treatment of adhesive otitis and oto-sclerosis, with no particular benefit. Lately the same agent has been applied locally, either through the Eustachian tube or through the external meatus, and its application combined with massage of the tympanum, with, it is said, successful results in purely adhesive lesions.

The routine consisted of an ear-bath each night of a warm solution of antipyrin (7½ per cent) and thiosinamine (15 per cent). Hearing usually improved in a fortnight, more especially in cicatricial adhesive conditions resulting from otorrhœa, where a large tympanic perforation enabled the liquid to enter the middle ear. In cases without perforation, the solution was injected through the Eustachian tube.

Examples of the results are given, and in conditions such as adhesive otitis, caused by former otorrhœa, adhesive otitis due to recurring tubo-tympanic catarrh, and adhesive otitis due to facial erysipelas which had spread to the ear, the range of hearing was improved, and tinnitus modified or disappeared. The most suitable cases for this form of treatment are those with adhesive otitis, a good labyrinth, and movable stapes.—WALKER DOWNIE.

DENTAL SCIENCE.

Some Notes on the Growth of the Jaws. By James T. Carter, L.D.S. (*Proceedings of the Royal Society of Medicine*, Odontological Section, 25th November, 1907).—In a very interesting paper the author gives a *résumé* of research work by Professor Edward Fawcett as yet unpublished. His researches were carried out by means of serial sections and the use of the reconstruction method.

In the mandible Meckel's cartilage is somewhat late in appearing, not becoming cartilaginous until after the femur. When formed, the two cartilages, seen in horizontal sections, form a horseshoe, at first incomplete, but soon meeting in the middle line. Each cartilage is thickened vertically on each side of the future symphysis.

Ossification commences in front of the anterior expanded end of Meckel's cartilage and the incisive branch of the inferior dental nerve, extending back under the mental nerve as a strip of bone rapidly diminishing in thickness. At this time there is no sign of an inner alveolar border. The inner alveolar border arises by ingrowth from the main mass just behind the mental nerve, and at no time is it completely separated from the main mass. In other words, there is no splenial centre. At first there is no inner alveolar border behind the incisive nerve, but a shelf grows backwards over Meckel's cartilage and under the incisive nerve. Thus the inner alveolar border arises from the main mass in two ingrowths, the first under the inferior dental nerve, enlarging backwards and terminating in the "lingula," the other growing under the outer end of the incisive nerve and extending inwards towards the middle line. Ossification begins in Meckel's about the tenth week in the region of the mental foramen, and gradually extends inwards, so that that portion of the jaw between the mental foramen and the symphysis is partly cartilaginous, partly membranous. This is the only portion of Meckel's which undergoes ossification, for posterior to the mental foramen the cartilage undergoes atrophy. The canal for the nerves is completed by growth of spicules from one alveolar border to the other over the nerves, the mental nerve first, then the incisive, and, much later, the inferior dental. An accessory mass of cartilage, quite independent of Meckel's, appears to form the condyle proximally, tapering away distally to a point in the root of the coronoid process. This plug of cartilage is enveloped everywhere, except at the condyle, by membrane bone, and is ossified early. Kollman has shown that other patches of cartilage occur at the angle and also along the outer alveolar border, in the neighbourhood of the incisor and canine teeth, but, according to Fawcett's observations, this is not ossified independently (this patch on the incisor region is of interest, in view of the opinion of Professor von Bardeleben, that the chin in man and other mammals is a distinct element). Here the author expresses the probability that these cartilaginous plugs do not present separate morphological elements, but are adaptations to the growth of the jaw. Thus, we find that the lower jaw is developed in membrane as a single element, and the old view, which held that there were a number of separate centres of ossification, homologous with the elements of the reptilian jaw, is incorrect.

The maxilla arises as a membrane bone exterior to the cartilaginous nasal capsule, and in the neighbourhood of the canine tooth germ, by one centre of ossification. Its first appearance is in the fœtus of about 18 mm. in length, and it is the third bone to appear. From this centre three processes rapidly appear:—

1. A nasal process which grows upwards.
2. An alveolar process which grows downwards, is thickened at the root to form the malar process, and might be called the alveolo-malar process.
3. A palatine process which grows inwards.

The alveolo-malar process grows backwards, fork-like, and between the two limbs of the fork the anterior dental nerve grows. These parts are well developed at 19 mm. At about 32 mm. cartilage is developed in the outer alveolar border in the region of the milk molars, and this is ossified by extension of bone from the main mass. Soon after this the internal alveolar border appears as a down-growth from the palatine process.

At this stage the bone is very flat behind the nasal process, and the eyeball is only separated from the tooth-germ by a thin plate of bone. At first the infra-orbital nerve lies on the top of the orbital surface, but, later, ridges of bone grow up on each side, and, meeting over it, form the infra-orbital canal.

Sometimes a suture remains here, which has been erroneously taken by Sutton, Polot, and others, to indicate double ossification.

The antrum of Highmore is derived from the cartilaginous nasal capsule. It is at first lined with cartilage, but this atrophies, and a mucous membrane alone remains. Fawcett found great difficulty with regard to the ossification of the premaxilla, owing to its irregular appearance, which is usually just after the maxilla, in the form of small scattered masses of bone, especially in the region of the incisors. Union between the premaxilla and maxilla commences soon afterwards at 22 to 24 mm., at the alveolar border, and extends upwards into the nasal process. At 50 mm. the premaxilla consists of two parts—(1) a processus lateralis, or facial part; and (2) a processus medialis, which runs backwards on the mesial side of Stenson's canal.

This mesial part—the so-called centre of Rambaud and Renault—is not a separate centre of ossification, but is simply a backward growth of the premaxilla. In many quadrupeds it is ossified independently.

The maxilla develops from one centre only, and the premaxilla also has but one centre. Arthur Keith has shown that the growth of the maxilla and the development of the antrum are closely related, and that the growth and changes in the lower jaw are correlated with, but secondary to, this development. He also pointed out that all the permanent molar teeth are developed in the posterior border of the jaw in front of the pterygo-maxillary fissure, and that owing to the expansion of the antrum this posterior border is carried downwards and forwards until it becomes the alveolar border. The effects of this growth are best seen in the gorilla, where the expansion of the sinus is enormous. The growth of the upper jaw is most rapid during the eruption of the permanent teeth. Growth adds to the depth of the posterior part of the jaw much more than to any other dimension, and this addition is due to the growth of the maxillary sinus.

Fawcett has shown that whilst the external pterygoid plate is ossified entirely in membrane, the internal is ossified in cartilage, and that ossification begins here earlier than has been supposed, having started on the 19 mm. fœtus.

Whilst bisecting the skull of an adult chimpanzee, the author found a condition which he does not think has been described hitherto, and that was the existence of an intermaxillary antrum formed by an offshoot of the maxillary antrum.

The growth of the mandible is determined to a large extent by the growth of the upper jaw. At birth its upper border is almost on a level with the condyle. With the growth of the maxilla, consequent on expansion of the antrum, the mandible gradually assumes its adult shape, the angle being the last portion to appear. The width of the ascending ramus is largely dependent on the length of the mandible, and this again is correlated with the cephalic length.

Thomson has proved that there is a distinct correlation between head length and mandibular length; also, that the longer jaws have, as a rule, the higher coronoid indices, *i.e.*, that in the case of a mandible with a high index, the force is applied at a point farther removed from the fulcrum than in a mandible with a low index.

$$\frac{\text{Condylo-symphysial length} \times 100.}{\text{Inter-condylic width.}}$$

The author states that with the progress of civilisation there has been considerable reduction of the mandible, quite out of proportion to the reduction in the size of the teeth. He also finds that the alveolar border is larger in proportion to the rest of the mandible in women than in men, and in civilised than in the lower races.

In negroes and Australian aboriginals there is generally a well-marked space between the posterior border of the third molar and the anterior surface of the ascending ramus. In Europeans, however, the ascending ramus overlaps the wisdom tooth by as much as 4 mm.

There is an unequal rate of growth of different parts of the jaw. Knowing that the mandible is formed as a single skeletal element, which grows in length by deposition of bone on the posterior border of the ascending ramus and absorption from the anterior surface, the author concludes that it is a case of arrested development.—J. FORBES WEBSTER.

Notes on a Case of Extensive Necrosis of the Mandible.

By W. W. James, F.R.C.S. (*Proceedings of the Royal Society of Medicine*, Odontological Section, 27th January, 1908).—H. W., a boy, aged 11 years and 2 months, has a marked deformity of the face, due to the loss of a considerable part of the mandible on the right side, and from the remaining part being pulled backwards and to the right by muscular action. The chin has receded, and is displaced to the right. The right cheek and region of the angle of the jaw present a marked swelling, due chiefly to the displacement of the soft tissues. The teeth are practically normal, except for changes due to altered condition of the mandible.

In April, 1906, the boy had a swollen face, with severe pain; his mouth was foul, and his gums swollen and ulcerated. He was ill for a week, had a high temperature, and at times was delirious. A medical man who was called in ordered a mouth-wash of borax and hot water. On the fourth day an abscess burst in the region of the first molar, giving vent to a profuse and foul discharge. The first molar was extracted later, but the discharge continued from the socket, and the swelling of the face did not diminish; he also had considerable difficulty in opening his mouth, and was unable to take solid food.

It was in this condition that Mr. James saw him. He found a necrosis of the mandible extending from beyond the socket of the first molar as far forward as the canine, and apparently to the lower border of the mandible. As pus was discharging by the sides of the first premolar and canine, they were removed and found to be necrosed. With the aid of a mouth wash the condition rapidly improved. The second molar had to be removed, and was found necrosed; the second premolar was also extracted, but this had a living pulp. The treatment continued for about six weeks, but as the separation of the mass took place very slowly, as did also the formation of new bone, Mr. James decided to remove it. He found the sequestrum perfectly free in front, but at the back it was attached not very firmly to the bone. About a fortnight later, the wound appeared to be quite healthy, the bone behind being quite covered.

He next saw the boy about twelve months later, when he presented with a piece of necrosed bone projecting at the back part of the mouth on the right side. The boy was taken into the hospital and the remaining portion of the jaw removed. Mr. James operated through the mouth, making an incision to the outer side of the condyle, and, dividing the capsule, was able to remove the remaining piece of bone, which was quite necrosed. After removing the condyle, he made a careful examination of the articulation, which appeared to be quite destroyed, but could find no sign of any dead bone or cartilage. As the position was favourable for free drainage, he did not pack with gauze, and everything went well.—J. FORBES WEBSTER.

Books, Pamphlets, &c., Received.

Diseases of the Heart (Nothnagel's Practice of Medicine). Edited, with additions, by George Dock, M.D. London: W. B. Saunders Company. 1908. (21s. net.)

Atlas and Text-Book of Anatomy, by Dr. Johannes Sobotta; edited, with additions, by J. Playfair M'Murrich, A.M., Ph.D. Vol. III: Vascular System, Lymphatic System, Nervous System, and Sense Organs. With 297 illustrations, mostly in color. London: W. B. Saunders Company. 1907. (25s. net.)

Diseases of the Nervous System, by H. Campbell Thomson, M.D.Lond., F.R.C.P. With 8 coloured and 12 black-and-white plates, and 101 figures in the text. London: Cassell & Company, Ltd. 1908. (10s. 6d.)

The Diseases of Children, a Work for the Practising Physician. Edited by Dr. M. Pfaundler and Dr. A. Schlossmann; English Translation by Henry L. K. Shaw, M.D., and Linnæus la Fétra, M.D., with an Introduction by L. Emmett Holt, M.D. In Four Volumes. Illustrated in black and white and in colors by 61 full-page plates and 430 text-cuts. Vol. I: Pathology, Symptomatology, Prophylaxis, Therapeutics, Feeding. Vol. II: Newborn, Puberty, General Diseases, Infectious Diseases. Vol. III: Digestive System, Respiratory System, Circulatory System, Thyroid Gland. Vol. IV: Genito-Urinary System, Nervous System, Dermatology. London: J. B. Lippincott Company. (Cash price, £4, 4s. net per set of four volumes.)

Quain's Elements of Anatomy. Edited by Edward Albert Schäfer, LL.D., D.Sc., F.R.S., Johnson Symington, M.D., F.R.S., Thomas Hastie Bryce, M.A., M.D. In four volumes. Vol. I: Embryology, by T. H. Bryce. Illustrated by more than 300 engravings, many of which are coloured. Eleventh edition. London: Longmans, Green, & Co. 1908. (10s. 6d. net.)

Glandular Enlargement and other Diseases of the Lymphatic System, by Arthur Edmunds, M.B., M.S., B.Sc.Lond., F.R.C.S.Eng. London: Henry Frowde and Hodder & Stoughton. 1908. (7s. 6d. net.)

Lectures on Babies (a Course of Lectures delivered at the Infants Hospital, Westminster), by Ralph Vincent, M.D., B.S., M.R.C.P. London: Baillière, Tindall & Cox. 1908. (2s. 6d. net.)

Diphtheria in Practice, by W. F. Litchfield, M.B.Syd. London: Baillière, Tindall & Cox. 1908. (3s. 6d. net.)

Hay-Fever, Hay-Asthma: Its Causes, Diagnosis, and Treatment, by William Lloyd. Second edition. London: Henry J. Glaisher. 1908. (4s. 6d. net.)

Experimental Researches on Specific Therapeutics, by Professor Paul Ehrlich, M.D., D.Sc.Oxon. (The Harben Lectures for 1907.) London: H. K. Lewis. 1908. (2s. 6d. net.)

Forensic Medicine and Toxicology, by J. Dixon Mann, M.D., F.R.C.P. Fourth edition, revised and enlarged. London: Charles Griffin & Co., Limited. 1908. (21s. net.)

Treatment of Gonorrhœa in the Male, by Charles Leedham-Green, M.B., F.R.C.S. Second edition. London: Baillière, Tindall & Cox. 1908. (5s. net.)

A Manual of Diseases of the Eye, by Charles H. May, M.D.New York, and Claud Worth, F.R.C.S.Eng. Second edition. London: Baillière, Tindall & Cox. 1908. (10s. 6d. net.)

Rough Notes on Remedies, by Wm. Murray, F.R.C.P.Lond. Sixth edition. London: H. K. Lewis. 1908. (4s. net.)

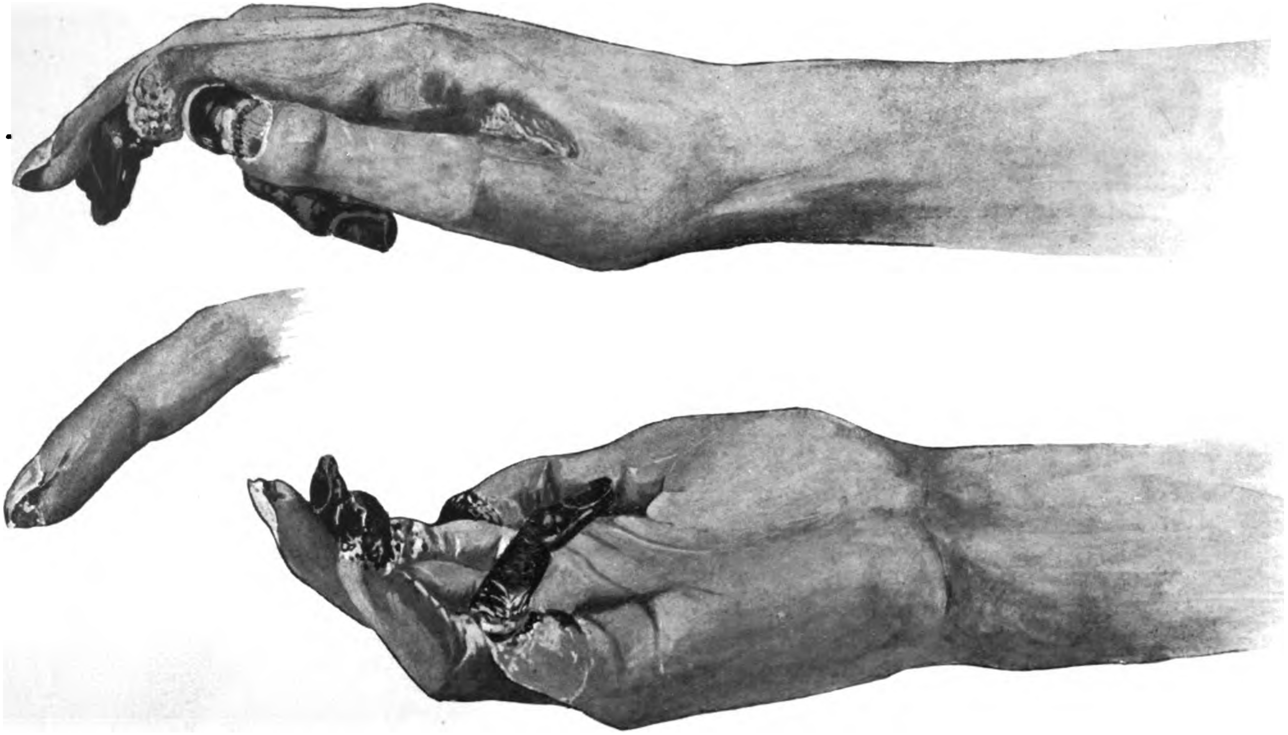
Diseases of the Spinal Cord, by R. T. Williamson, M.D.Lond., F.R.C.P. With 183 illustrations and 7 plates. London: Henry Frowde and Hodder & Stoughton. 1908. (15s. net.)

GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR THE FIVE WEEKS ENDING 20TH JUNE, 1908.

	WEEK ENDING				
	May 23.	May 30.	June 6.	June 13.	June 20.
Mean temperature, . .	52·3°	55·6°	57·5°	52·9°	52·6°
Mean range of temperature between day and night, .	23·3°	43·2°	27·7°	19·0°	23·4°
Number of days on which rain fell, ...	3	2	2	5	5
Amount of rainfall, . ins.	0·17	0·66	0·62	1·21	0·33
Deaths registered, . . .	247	271	232	230	264
Death-rates, ...	15·0	16·4	14·1	14·0	16·0
Zymotic death-rates, . .	1·1	1·2	0·7	0·6	1·5
Pulmonary death-rates, .	4·3	4·3	5·2	3·4	3·6
DEATHS—					
Under 1 year, ...	38	71	30	45	28
60 years and upwards, .	50	59	56	54	45
DEATHS FROM—					
Small-pox, ...	...	...	...	...	...
Measles, ...	7	7	4	2	9
Scarlet fever, ...	3	...	1	1	1
Diphtheria, ...	1	3	5	3	1
Whooping-cough, . .	4	8	1	5	11
Fever, ...	2	...	1	...	1
Cerebro-spinal fever, . .	5	2	1	...	4
Diarrhœa, ...	6	8	1	3	8
Croup and laryngitis, .	...	1	...	...	...
Bronchitis, pneumonia, and pleurisy, ...	42	48	42	30	39
CASES REPORTED—					
Small-pox, ...	...	...	...	...	...
Cerebro-spinal meningitis, .	5	4	4	5	5
Diphtheria and membranous croup, ...	10	13	18	19	16
Erysipelas, ...	13	17	19	20	17
Scarlet fever, ...	48	66	51	36	41
Typhus fever, ...	...	...	...	...	...
Enteric fever, ...	7	4	7	3	5
Continued fever, . . .	...	...	...	...	2
Puerperal fever, . . .	2	...	2	2	3
Measles,*	237	156	155	161	126

* Measles not notifiable

SANITARY CHAMBERS,
GLASGOW, *24th June, 1908.*



GANGRENE OF THE EXTREMITIES AFTER PNEUMONIA.

THE

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ORIGINAL ARTICLES.

GANGRENE OF THE EXTREMITIES AFTER PNEUMONIA, WITH NOTES OF TWO ILLUSTRATIVE CASES.

By A. N. M'GREGOR, M.D., F.F.P.S.G.,
Senior Assistant Surgeon, Glasgow Royal Infirmary.

The association of pneumonia with gangrene of the extremities as a complication is rare, and the present case is particularly interesting from the medical and surgical points of view. The precise mode of occlusion of the vessels, the period favourable to the onset of the gangrene, and the establishment of the collateral circulation, as well as the results of operative interference, are of importance both to the physician and the surgeon. The following notes were made when the patient first appeared at the Glasgow Royal Infirmary for treatment of the gangrenous hand:—

A. B., æt. 18 years, a carter, was admitted to Ward 25 on 9th May, 1908, with gangrene of the fingers of the right hand of about four months' duration. Until the beginning of this year he had always enjoyed good health, never having had any illness except measles and chicken-pox in childhood. He has never had any of the signs or symptoms of Raynaud's disease.

About 10th January he had an attack of pneumonia, which kept him confined to bed for nine weeks. When he had been ill a week, it was noticed that the tip of the nail of the little finger of the right hand was becoming black, and this discolouration gradually spread up the nail. At the same time the pulp of the finger became black from the tip upwards. Next day he noticed the same thing beginning in the first and third fingers, then, a few days later, in the thumb, and, a week later, in the middle finger.

In the little finger the gangrene spread to the middle of the first phalanx, the finger bending down to the palmar aspect of the hand a little more each day until, in about six weeks' time, the skin on the dorsal aspect of the fingers broke, exposing the bare bone. The gangrenous process involved nearly the whole of the distal phalanx of the ring finger. The disease in the index finger spread to the middle of the second phalanx, and was accompanied by great swelling of the rest of the digit. Suppuration occurred at the junction of the dead and the living parts, an abscess formed and burst, and a good deal of pus came away. Since then there has been a little discharge from a small opening near the line of demarcation. The gangrene of the second finger was limited to a very small area under the nail, and the pulp at the tip became hard like the others, but did not turn black, being only covered by a brownish skin extending up the finger for about a quarter of an inch, and this soon peeled off.

About three weeks after the commencement of the gangrene he noticed a small crack in the web between the thumb and the first finger. The surrounding skin became black, but did not get hard, and in about a fortnight this burst, and a black pulpy material, together with some blood, came away. It afterwards dried up, and the thumb became fixed, so that he could not abduct the thumb, and, indeed, could only flex the terminal phalanx.

All the fingers, except the second, were black as far up as they are at present within a week of the onset of this affection, and within another week they had become quite hard and insensitive. He says that he has suffered no pain with it at any time. He states that when this condition began he was for three or four weeks unable to raise his right arm or hand from his side, but the power gradually returned, and it is now all right. The condition has remained stationary for at least two months. He has never noticed any similar changes in any other part of the body.

The doctor who attended him during the attack of pneumonia states that the patient got over his crisis all right, but that after the crisis he noticed that the fingers of the right hand were white and cold, and that in a very short time they became black. His attention was drawn to the fingers by the patient complaining of some pain in them. Probably, as the patient suggests, the reason why he does not remember having had pain in the fingers is that he was delirious for some time.

The attack was so acute that the doctor did not expect him to recover. He further reports that he could feel the pulse in the brachial artery, but not below its bifurcation. The patient says that after the first week of his pneumonia he lay mostly on his right side, and was so weak that he could not voluntarily alter his position.

Present condition.—On inspection of the hand it is seen in the supine position with all the fingers, except the middle one, in partially flexed positions. Twitchings of muscles and groups of muscles occur at frequent intervals, and these contractions are not confined to any part of the fore-arm or hand. There is considerable emaciation of the thenar and hypothenar eminences, and this wasting is apparently greater than that of the rest of the hand or of the fore-arm. The gangrenous portions occupy the positions described above. In the little finger the gangrenous portion is quite desiccated, and the line of separation extends right down to the bone, all round, at the middle of the first phalanx. There is slight ulceration at this line of separation, together with some redness and swelling, on its proximal side. Voluntary flexion and extension of the finger at the metacarpo-phalangeal joint is fairly good. The amount of necrosis of the third finger corresponds to the ungual phalanx. The line of separation is quite marked. A little moisture is apparent on the flexor aspect, but otherwise the finger is quite dry. Voluntary movements of the two proximal phalanges are readily performed with this finger. In the middle finger there is a little scar tissue, measuring laterally half an inch and vertically a quarter of an inch, occupying the site of the tip of the finger. The movements of this digit are free at all the joints. The gangrene of the index finger involves the two distal phalanges. The line of separation is well marked down to the bone, and there is evidence of previous septic inflammation. The ulcerative process is marked on the palmar aspect. The movement of the healthy portion of this finger is fairly good. In the thumb the gangrenous portion is limited to the distal half of the ungual phalanx. The line of separation is apparent on the anterior surface, but the nail is intact, though its distal half is black.

There has been considerable loss of tissue between the metacarpal bone of the thumb and that of the first finger, involving the whole of the web, and extending as far as the carpus. At this site there is a deeply depressed scar, with some desquamation on its surface, which, by its contraction, has approximated the metacarpal bones of the thumb and first finger, so that the thumb cannot be abducted. Flexion and extension of the thumb are very limited, apparently due to ankylosis of the joints.

At this date the pulsation of the brachial artery is palpable down to the bicipital tendon, but below that point no pulsations are perceptible to the examining finger along the lines of the radial and ulnar arteries, or about the wrist. On this point Dr. T. K. Monro observed that "when Oliver's sphygmomanometer was applied immediately below the elbow no pulsatile oscillations were seen. When applied above that joint pulsations were shown. The diastolic pressure was normal. Pulsation is felt in the left radial and ulnar arteries at the wrist."

He further reported on the medical aspects of the case as follows:—His parents are healthy. He has one step-brother and one step-sister, both of whom are healthy. His full sister is healthy. One brother died at 9 years of age with some head trouble.

The right shoulder is lower than the left, and movement of the right chest is less than that of the left. The infraclavicular hollow is greater on the right than on the left side, and the prominence of the right shoulder is more angular than on the left side. The right supra and infraspinous fossæ are slightly more marked than on the left side.

The region of clear pulmonary percussion extends on the right front down to the fourth space in the nipple line, and to the fifth space in the anterior axillary line. At the back, percussion is impaired from the base almost up to the apex, but particularly from the base up to the middle of the scapula. Over the dull area at the right posterior base there is loss of V.F., with great diminution of respiratory murmur. V.R. is, if anything, increased.

The apex-beat of the heart is in the usual situation; the superficial cardiac dulness is nearly normal, and the heart-sounds are likewise normal. No signs of disease are found about the aorta.

The pupils are medium and equal. The right fundus is normal. The left disc is ill-defined, but there is a suspicion of swelling. The plantar reflexes are of normal type. The knee-jerks are active.

One or two large glands are felt below the angle of the jaw on each side, but none in the axillæ or about the clavicle.

The patient is quite free from pain in the affected hand, and the muscular power of the affected limb is in great measure retained. The senses of touch, pain, and temperature are normal, or nearly so, even in the healthy parts of the affected hand.

GIRTHS OF THE UPPER LIMBS.

Left upper arm, .	8½ in.	Left fore-arm, . .	9 in.
Right upper arm, .	7½ in.	Right fore-arm, .	8⅝ in.

There is no disease about the lower limbs. Examination of the abdomen reveals no abnormality. A cyrtometer tracing taken below the nipples and scapula shows practically no difference between the two sides, except flattening in the right lower anterior region.

Dr. H. H. Borland found the coagulation period of the blood to be five minutes forty-five seconds.

[A. N. M'G.].—The superficial venous circulation is apparently normal in extent and distribution as compared with the normal limb. The patient is left-handed.

On the outer aspect of the right fore-arm, near the elbow, the skin is markedly red in colour, desquamating, and showing signs of recent excoriation. The ear of the same side also bears a scar indicating the existence of a recent pressure sore.

Operation.—On 21st May the patient was put under the influence of chloroform with ether, and the gangrenous portions of the fingers were excised. As the lines of separation extended down to the bone, the amputations were made with short lateral incisions at points sufficiently above the upper limit to allow of the stumps being covered with skin. The ulcerating edges were removed, and the extensor and flexor tendons sutured, except in the case of the thumb, where the necrosed nail and part of the ungual phalanx were simply excised. The two distal phalanges of the index finger, the third phalanx of the ring finger, and the whole of the little finger were removed. A remarkable feature of the operation was the small amount of hæmorrhage. A slight capillary oozing occurred in the stumps of the first, third, and fourth fingers, which was easily controlled by the skin sutures. No individual bleeding vessel was observed. Dry gauze and cellulose dressings were applied. The patient took the anæsthetic well, and recovered promptly after the operation. The temperature rose to 99° F. on the day after the operation, and never exceeded 100° F. during his stay in hospital. At the first dressing on the eighth day there were a few drops of purulent fluid observed on the thumb and little finger; the other stumps were dry. The dressings were finally removed on the fifteenth day after operation, the wounds being then quite healed, and the patient was sent to the country.

He was seen on 26th June, when the fingers were quite soundly healed, and some improvement in voluntary movements was appreciated. Passive movements and massage were continued.

There have been so few cases recorded of pneumonic gangrene of the extremities that it is hardly possible to make an exhaustive study of its pathology. If this gangrene were but the hastened occurrence of the termination of senile arterial degeneration brought on by the exhaustion of a fevered state, then it would present little difficulty. A case is recorded by Price.[12] It would be explained by the weakened cardiac force being no longer able to propel the blood at a sufficient rate through the diseased arteries to the extremities. Such a sequence of events is not confined to pneumonic gangrene, but may happen in all diseases accompanied by high fever and much debility in the aged. It would therefore be looked upon as an accidental coincidence when pneumonia was the debilitating agent. In like manner the acute decubitus (Galliard[1]), or bedsore gangrene, is common in exhausting diseases, and if it is held to be due to an enfeebled circulation plus a local pressure interfering with, or interrupting, the blood-stream, then it need not be called a pneumonic gangrene, nor considered separately from like occurrences in other febrile or debilitating diseases.

So too, embolic gangrene, occurring during pneumonia, where the embolus is due to cardiac disease which existed prior to the onset of the pneumonia, cannot be classed as peculiar to pneumonia. These three varieties of gangrene, however, form but a minimal proportion of the cases.

A study of the recent literature of the subject shows that the majority of the cases are of different origin, and that while the mechanical elements of altered blood (Keen[25]), weakened heart, and mechanical difficulties exist, and are bound to have an influence on the occurrence of thrombi, the evidence of bacillary action cannot fail to be considered as the most important factor in the etiology.

The presence of the pneumococcus in the blood is now recognised. Widal, Lemière, and Gadow[26] reported cases in which successful cultures were made from the blood in 6 out of 18 cases. Phillipi[27] reported a case in which only a pure culture of the pneumobacillus of Friedlander grew, and after the patient's death the same organism was obtained from the lungs. Rosenow[28] got positive results in 77 out of 83 cases, in each of which only one examination was made, so that it may be fairly taken that the bacillus is present in the blood in all cases. The agglutination tests as applied by the same writer showed that serum on the second day possessed distinct agglutination powers, that this power increased up to the crisis and thereafter gradually diminished. From the foregoing it will be apparent that two factors are contained in the blood of pneumonia cases which favour clot formation.

Inasmuch as venous thrombosis sometimes produces moist gangrene in pneumonia, it may be considered within the scope of the inquiry, and the observations of Gaultier,[7] and Gaultier and Pierre,[8] on pneumococcic phlebitis are eminently instructive. The former records a case of phlebitis followed by embolism of the right pulmonary artery, of which the following is an abstract:—Male, æt. 25; pneumonia of left apex, delirium tremens, crisis on the sixth day, thrombosis of the left femoral vein eight days after admission. Pulmonary embolism on exertion, causing death in five minutes. *Post-mortem*, embolus in right pulmonary artery, clot in the left femoral vein containing diplococci which were not decolorised by Gram's method. The veins thickened and remained patent on section; the intima showed whitish-yellow patches. There can be no doubt that the thrombosis was directly due to the influence of the pneumococcus, for not only were the bacilli found in clot, but there were patches of whitish-yellow colour on the intima of the vein, and the increased thickness of the wall of the vein as an evidence of the phlebitis.

In his discussion on the subject Gaultier gives the first reported case as that of Mya,[29] and remarks that by that time Widal had published his thesis on the *rôle* of the streptococcus in phlegmasia alba dolens (quoted by Vaquez in the *Cliniques Médicales de la Charité*, Paris, 1894). Gaultier also refers to 3 cases by Da Costa,[30] to 30 cases gathered by Steiner,[31] and to an observation, No. 1 of Widal's Memoire in the *Société Médicale des Hôpitaux*, 7th April, 1903. Galliard[2] reports a case in which phlebitis of the left internal saphenous vein occurred on the thirteenth day after pneumonia, painful, and accompanied by swelling of the leg. Pleural effusion followed on the twentieth day, and these complications began to diminish on the twenty-seventh day. Woodman[3] records a case in which all the veins of the right leg were full of fibrinous clot, and the leg was swollen to three times its natural size. *Post-mortem*, no clots were found in the arteries. Miller[32] reports a case in a man, æt. 44, occurring in the femoral vein and its branches on the eighteenth day, two days after the temperature had reached normal. The patient recovered, and was dismissed on the thirty-third day. He also quotes 3 cases not then published by Steiner. Preble[33] remarks that he has seen 3 cases, one of the right arm, one of the left, and one a patient with a remarkably developed collateral venous circulation following venous thrombosis after pneumonia. There is a case recorded by Dufour[38] of gangrene, in which the veins were swollen and inflamed, after pneumonia.

These cases serve to show that the pneumococcus is an active cause of thrombosis in veins, and that probably the process is that of endophlebitis with clot formation on the affected area of the intima. Gaultier (*loc. cit.*) gives the mortality of the cases he has gathered as follows:—Of 34 cases there were 25 recoveries and 9 deaths, and of the latter 7 were due to pulmonary embolism. Miller (*loc. cit.*) quotes statistics in 48 cases, including those of Steiner (most of which are included in Gaultier's analysis), showing that it is more common in women than in men, and almost always affects the lower limbs. The arms were affected in only 3 out of the 48 cases, 9 of the patients died, and in 5 the cause of death was pulmonary embolism.

The origin of the emobli which were found in the arteries of the extremities in pneumonic dry gangrene was presumably the heart, and the case reported by Kredel[6] strikingly corroborates that view:—Male, æt. 48 years; heart, systolic mitral murmur at first examination, which disappeared later. Pneumonia, crisis on 20th September. Two days later a severe cutting pain in the right leg; next day the leg was cold, and it as well as the foot were blue. On the 26th, a line of demarcation became apparent under the knee, and at this time the femoral pulse could not be felt below Poupart's ligament. The heart sounds were then normal. *October.*—Pulse of the femoral felt—weak, demarcation line distinct. Amputation of the lower half of the thigh.

8th October.—Diagnosis: complete thrombosis of the femoral artery following embolism from the left heart. He quotes Hjelt, who reported a case of embolism of the abdominal aorta, and remarks the absence of reported cases in German and Austrian literature, and states that he could only find two in foreign journals.

The occurrence of endocarditis in pneumonia is put at 0·3 per cent in all cases and 4 per cent in fatal cases by Wells,[34] who insists that the endocarditis in pneumonia usually occurs on the left side of the heart, chiefly on the mitral valve, and happens early in the disease. Strada[35] found 9 cases of diplococcic endocarditis in 85 autopsies, and Sakhatsky[36] estimated the percentage at 0·2. In 100 autopsies of pneumonia made by Osler[37] at Montreal, endocarditis was found in 16 cases; in 5 of these it was simple, in 11 ulcerative. Pye Smith and Porter report a case in which embolic gangrene occurred on exertion two months after pneumonia, and at the autopsy a firm clot was found in the middle cerebral artery, in the right popliteal, in the left anterior and posterior tibial arteries, and also a hæmorrhagic infarction in the upper lobe of the right lung. There was no disease of the heart valves, nor signs of clots or vegetations. The emboli showed no differences between their centres and peripheries.

The case reported by Attix,[5] was due to embolism of the right femoral. A mass was palpable in Scarpa's triangle, below which there was no femoral pulsation. *Post-mortem*, the embolus was found in the femoral artery at the profundal branch, extending for an inch down the main vessel, and half an inch down the branch. Below the embolus the artery was patulous; above it, as far as Poupart's ligament, it was filled with loose clotted blood. The embolus was not examined bacteriologically. Tuppinger[39] reports a case of gangrene of both lower extremities, with a large sore on the back, after pneumonia, in which pulsation was absent from the right popliteal artery.

There are other reported cases by Forsman and Estlander,[18] of both limbs; Hamilton,[19] of the left femoral; Luc,[23] embolus of the left femoral and infarction of the kidney; Seidelmann,[10] symmetrical gangrene of the lower limbs; Reddy,[13] of the right femoral artery; and Favre,[17] of the right radial artery and hemiplegia. Though in some of these cases (Hervey and Luc) the existence of atheroma of the aorta is noted, the preponderance of evidence is in favour of the view that the clots are formed in the heart. Loomis in 1879,[22] wrote of heart clot in pneumonia.

Whilst the great majority of cases of dry gangrene are due to embolism, in Kredel's case (*loc. cit.*) there was complete thrombosis of the femoral following embolism. Granted that pneumococcic lesions of the endocardium and of the intima of the veins do occur, there seems no good reason to doubt that similar lesions of arteries may cause dry gangrene. The greater frequency of phlebitis is probably due to the slower movement of the blood-stream allowing greater facility for pneumococcic invasion of the walls of the veins and for clot formation. If, however, some mechanical obstruction to the arterial stream should happen, a similar invasion may occur. In the case of a large sacral gangrene reported by Galliard (*loc. cit.*), it is possible that the pneumococcic invasion of the point of pressure was the cause of its greatly extended area, and perhaps accounted for some of the subsequent suppuration.

In the case presently reported the history of the commencement of the gangrene is not that of a sudden onset with sharp pain as is common in embolism; and the late establishment of a collateral circulation seems to imply that the arterial obstruction was not simply that of a plug at one point, say the bifurcation of the brachial, but that the radial and ulnar arteries were both occluded to a considerable extent (*vide infra*).

From the foregoing it is evident that the following factors in pneumonia may determine gangrene of the extremities:—

1. The blood containing pneumococci, probably in all cases, and with a marked agglutinating power which increases up to the crisis and then gradually diminishes.
2. The weakness due to the acute fever, and in particular the cardiac asthenia, which is most marked immediately after the crisis.
3. The occurrence of pneumococcic endocarditis, even in the earlier stages of pnuemonia, sometimes resulting in the formation of clots or vegetations, which, passing into the arterial circulation, become emboli.
4. The invasion of the veins by pneumococci causing phlebitis and thrombosis, sometimes followed by pulmonary embolism.
5. A probable similar invasion of the intima of the arteries resulting in arterial thrombosis.
6. Thrombosis of arteries following embolism, where the clot formation extends to some distance and shuts off the collateral circulation.

The evidence of these varieties of causes of gangrene is not so complete in pneumonia as in typhoid fever, on account of the paucity of cases and observations, but the similarity of the lesions in the two diseases is very marked. Keen[25] has published an exhaustive review of typhoid gangrene and its causes. In addition to the causes enumerated in his earlier work, *The Fifth Toner Lecture*—altered blood, weakened heart, and mechanical difficulties—the discovery of bacilli in the blood, endocardium, walls of arteries, walls of veins, thrombi, and perivascular tissues, and the bearing of these new factors on the subject, have been carefully studied, with the result that the obstructions to circulation are grouped in four classes:—

1. Arterial emboli of cardiac origin
2. Autochthonous thrombi in arteries.
3. Autochthonous thrombi in veins.
4. Thrombi in small peripheral vessels.

Keen's statistics show that cases of gangrene due to arterial emboli are evenly distributed between the two lower limbs—both legs, eight cases; right leg, nineteen; and left leg, nineteen—and this may be taken as evidence of the endocardial origin of the clots. In striking contrast the predominance of left-sided venous thrombosis—both legs, four cases; right leg, ten; and left leg, thirty-eight—may be quoted to show that the formation of clots in the vessels is probably favoured by mechanical obstruction, such as the passage of the left common iliac vein under the right common iliac artery. A similar diversity is obvious in the cases of arterial and venous thromboses without gangrene. Of fifteen arterial thromboses, both legs were affected in four, the right leg in six, and the left leg in five. Of forty-seven venous thromboses, both legs were affected in three cases, the right leg in thirteen, and the left leg in thirty-one. Combining the figures of the cases of arterial and venous obstruction, whether followed by gangrene or not, the results are—

Arterial obstruction, 61 cases (46 + 15)—	
Bilateral,	12 cases.
Right side,	25 „
Left side,	24 „
Venous obstruction, 99 cases (52 + 47)—	
Bilateral,	7 cases.
Right side,	23 „
Left side,	69 „

The other points of interest in that monograph, as directly bearing on the probable similarity of the lesions in pneumonic gangrene, are the large proportion of recoveries in venous thrombosis, and this is also the experience in pneumococcic thrombosis of veins, the discovery of discontinuous clots in arterial and venous thrombosis, probably indicating spots of local infection, and the fact that the lower limbs are affected more often than all the other parts of the body together.

The date of onset of the gangrene in typhoid fever is given as "late in the course of the fever or in early convalescence," and this also agrees with the experience in pneumonia. Gaultier remarks that "it occurs usually at the commencement of convalescence," and in all of the cases studied the onset was noted as occurring shortly after the crisis. Keen attributes the later appearance of the gangrene to, firstly, the greater vitality of the patient in the earlier stages of the disease, and the resistance of his tissues as being sufficient to combat the disease; and, secondly, and chiefly, because a certain length of time is required for the diffusion of the bacilli and their products, and so for the production of their evil effects. To these may be added cardiac asthenia, and the diminished blood pressure when the fever has subsided favouring the deposit of the bacilli, and the weakness of the patient so that he is helpless and dependent on outside assistance for changes of position. In the present case the occurrence of pressure sores on the right ear, and the outside of the right fore-arm, point to local pressure as a cause of the arterial obstruction. It may be remarked that the patient had no skilled nursing, and that for some time he was unable to turn himself in bed.

The distribution of the gangrene in this case is peculiar, and raises the question as to whether the obstruction was due to an embolus or to thrombosis. A study of the collateral circulation shows that the radial and ulnar arteries have a fairly liberal anastomosis with each other and with the interosseous arteries, so that if the obstruction had been limited to the deposition of an embolus in either vessel, gangrene need not have resulted, and if it did happen, it would be expected on the side corresponding to the occluded vessel. But both sides of the hand were more markedly affected than the centre, and the gangrene was most marked in the area suppplied by the terminal branches of both of these arteries. If the embolus lodged at the bifurcation of the brachial, the interosseous and recurrent radial and ulnar vessels might have been expected to take up a sufficient blood supply to restore a measure of blood current in the radial and ulnar arteries. As the distribution of the gangrene, however, shows the middle finger to be the part least affected, and, therefore, having the best blood supply, some other explanation is necessary. The interosseous arteries (see diagram) at their lower ends join the palmar arches just at the points where the digital arteries to the middle finger arise, and at their upper ends communicate with the superior profunda by a recurrent branch. It would seem then that the peripheral blood-supply travelled by that route, and it is probable that the failure of the ulnar and radial arteries to participate in that collateral supply was due to thrombosis. It is noteworthy that even at the date of this report no pulsation can be detected in these vessels.

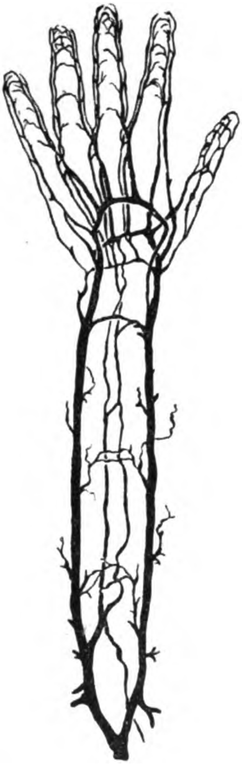

Diagram of collateral circulation of the fore-arm and hand. (*Deaver re-drawn.*)

Consideration of the question as to whether the gangrene was due to embolism followed by thrombosis or to primary arterial thrombosis brings out the following points in favour of the latter view. The obstruction of the two main branches of the brachial by clots that extended distally and occluded both vessels throughout, and the occurrence of pressure sores on the outside of the fore-arm and the ear of the same side, point to local pressure. As the patient lay mostly on his right side, it is probable that the weight of his body so retarded the blood-stream as to favour thrombosis. Then, too, the absence of other embolic lesions of cardiac signs, and the occurrence of the lesion in the arm, and not, as usually, in the lower limbs, though of less value, are of some importance. The onset was not that of a sudden acute pain, immediately followed by blanching of the fingers, as is common in embolic gangrene.

The operation consisted in the removal of the dead portions of the fingers, after the lines of separation were well marked, and that, indeed, is the usual practice in operating for gangrene. No tourniquet was used, and it was interesting to find subsequently that Keen (*loc. cit.*) quotes Quervain's objections to the use of Esmarch bandages in those cases on account of the fear of damaging the vessels, and of breaking up a thrombus, which would give rise to a dangerous embolus. He adds the further objection that the septic fluids in the tissues should not be forced into the general circulation. The experience of the absence of hæmorrhage during the operation is similar.

The following is another case of gangrene after pneumonia, hitherto unpublished, which occurred in the practice of Dr. D. N. Knox in the surgical wards of the Glasgow Royal Infirmary, and he has kindly supplied the report.

"Annie W., æt. 4 years, was admitted to Glasgow Royal Infirmary on 19th December, 1894, suffering from gangrene of the right foot and leg. The history given by Dr. Kerr, of Hamilton, was that she had had an attack of bronchopneumonia about four weeks previously. During convalescence a bluish discolouration was noticed around the nail of the little toe, and from this point the discolouration spread rapidly over the foot and halfway up the leg. On admission, dry gangrene was found over the entire foot and lower half of the leg. The toes were quite black and shrivelled, and the sole of the foot horny. There was no break of the epidermis anywhere, and only a faint line of demarcation beginning about the middle of the leg. The line of separation was very slow in forming, but on 16th February, 1895, amputation was performed, and she left the infirmary, well, on 27th March. Her general health while in the infirmary was good. Since the operation she has been seen many times, and has remained strong and well."

This case follows the more common type of embolic gangrene, happening during convalescence and in the leg. The operation was also delayed until the line of demarcation was distinct, and the recovery was good.

In conclusion, it may be remarked that there is room for more specific information as to the proportion of fatal cases of pneumonia in which ante-mortem clots are found in the heart and vessels, and as to the occurrence of pneumococci in the clots, in the endocardium, in the intima of the veins or arteries, and in the perivascular tissues, for it is only by such research that the *rôle* of the bacillus in pneumonic gangrene can be accurately determined.

BIBLIOGRAPHY.

[1] Galliard, "Decubitus aigu surviennent au neuvième jour d'un pneumonie franche; elimination de l'eschar; a l'autopsie pneumonie guéri," *France Médicale*, Paris, 1881, vol. xxviii, p. 64.

[2] Galliard, "Phlegmasia alba dolens," *Ibid.*, 1888, vol. i, p. 184.

[3] Woodman, W. B., "Broncho-pneumonia, gangrene of the right leg," *Med. Times and Gazette*, London, 1863, vol. ii, p. 329.

[4] Pye Smith and Porter, "Pneumonia, convalescence, gangrene of both feet, paralysis of left arm and leg, and right side of the face; necropsy," *Lancet*, London, 1884, vol. ii, p. 1143.

[5] Attix, "Double embolic gangrene of the lower extremities as a complication of pneumonia," *Journ. Am. Med. Assoc.*, Chicago, 1896, vol. xlvi, p. 1287.

[6] Kredel, "Embolische Extremitätengangrän nach Pneumonie," *Deutsche Med. Ztg.*, Berlin, 1904, vol. xxv, p. 1024.

[7] Gaultier, "Étude sur la phlébite pneumonique apropos d'un cas terminé par embolie de l'artère pulmonaire," *Bull. et Mém. Soc. Anat. de Paris*, 1904, vol. lxxix, p. 565; contains also a reference to

[8] Gaultier et Pierre, "Phlébite pneumonique," *Gazette des Hôpitaux*, Paris, 1904, vol. lxxvii, p. 977.

[9] Miller, D. J. M., "A case of femoral thrombosis in acute croupous pneumonia," *Philad. Med. Journ.*, 1903, vol. ix, p. 834.

[10] Seidelmann, "Ein fall von symmetrischer Gangrän der Extremitäten nach Pneumonie," *Deutsche Ztg. f. Nervenh.*, Leipzig, 1904, vol. xxvii, p. 114-120.

[11] Person, V. A., "Two cases of phlegmasia alba dolens following pneumonia," *Tr. Lucerne Co. M. Soc.*, Wilkesbarre, 1904, vol. xii, p. 102.

[12] Price, J., "Case of senile gangrene following pneumonia," *Cincinnat. Lancet and Obst.*. 1860, vol. iii, pp. 688-692.

[13] Reddy, "Pneumonia of the right lung followed by embolism of the right femoral artery, gangrene, amputation of the thigh, recovery," *Canada Med. and Surg. Journ.*, Montreal, 1876-77, vol. v, p. 61.

[14] Valette, "Coagulations veineuses," Abstract in *Paris Médicale*, 1881, vol. vi, pp. 169-171.

[15] Crocker and Neuman, "Thrombosis of the thigh, *Australian Med. Journ.*, Melbourne, 1883, vol. iv, s.v. p. 267.

[16] Escolar, "Pleuropneumonia aguda con tuberculosis incipiente, termine par gangrena humida de les extremidades inferiores," *Siglo Medicale*, Madrid, 1868, vol. xv, p. 85.

[17] Favre, "Pneumonie du sommet droit, hemiplégie gauche, suppression du pouls de la radiale droite," *Courrier Médicale*, Paris, 1886, vol. xxxvi, pp. 252-256; also *Revue Médicale de la Suisse*, Rom. Géneve, 1886, vol. vi, pp. 285-290.

[18] Forsman and Estlander, "Gangrän i nedra extremitaten efter pneumonie," *Finska laksallsk-handl.*, Helsingfors, 1870, vol. xii, p. 273.

[19] Hamilton, F. F., "Embolism of the femoral artery following acute lobar pneumonia; gangrene of the leg," *New York Med. Journ.*, 1880, vol. xxxii, p. 63.

[20] Hervey, "Embolie de l'artère femorale gauche survenue chez un sujet atteint de pneumonie et de l'atherome de la partie supérieure de l'aorte," *Bull. Soc. Anat. de Paris*, 1873, vol. xlviii, pp. 216-219.

[21] Lande, "Pneumonie, thrombose, mort subite par embolie," *Mém. and Bull. Soc. Medico-Chir. d'Hôpitaux de Bordeaux*, 1871, vols. v-vi, p. 153.

[22] Loomis, "Heart clot in pneumonia," *New York Med Journ.*, 1879, vol. xxix, p. 371.

[23] Luc, "Gangrène momifeante du pied gauche survenue dans le convalescence d'une pneumonie, atherome de l'aorte, embolie de la femorale, infarctus du rein gauche," *Bull. Soc. Anat. de Paris*, 1880, vol. lv, p. 996.

[24] Malherbe, "Études cliniques et anatomiques sur le formation des caillots dans la système circulatoire sous l'influence de pneumonie, &c.," *Journ. de la section de Méd. Soc. Acad. Loire Inférieure*, Nantes, 1843, vol. xix, pp. 121, 205.

[25] Keen, W. W., *Surgical complications and sequels of typhoid fever*, Philadelphia, 1898.

[26] Gadow, *Münchener Med. Wochenschrift*, 11th November, 1902.

[27] Phillipi, *Bull. et Mém. de la Société Méd. des Hôpitaux de Paris*, 1903, p. 415.

[28] Rosenow, *Trans. Chicago Path. Society*, 1903, p. 265.

[29] Mya, *Revista Clinica Medica*, 31st May, 1891.

[30] Da Costa, *Philadelphia Med. Journ.*, 10th September, 1898.

[31] Steiner, *Johns Hopkins Hospital Bulletin*, 1902.

[32] Miller, *Philadelphia Med. Journ.*, 1903, vol. xi, p. 834.

[33] Preble, *Progressive Medicine*, 1904, vol. i.

[34] Wells, *Jour. Amer. Med. Assoc.*, 18th October, 1902.

[35] Strada, *Lo Sperimentale*, Florence, vol. lvi, No. 2.

[36] Sakhatsky, *Roussky Vratch*, 4th October, 1903.

[37] Osler, *Prin. and Pract. of Med.*, London, 1905, sixth edition, p. 171.

[38] Dufour, *Soc. Méd. des Hôpitaux de Paris*, 18th October, 1901.

[39] Tuppinger, *Wien. klin. Woch.*, 1899, No. 13.

AN EXPERIMENTAL INVESTIGATION INTO THE FUNCTION OF THE THYMUS GLAND.[1]

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Experimental extirpation of the thymus dates back as far as 1845, when the Italian, Restilli,[2] removed the gland from a number of animals. The next investigation was carried out by Friedeleben,[3] and his results were published in a most comprehensive and detailed treatise in 1852. In 1887 Hermann and Fournaux,[4] in the article "Thymus" in the *Dictionnaire des Sciences Médicales*, sum up the matter by saying that since Friedeleben's time there has been little progress. From this time onwards, especially in more recent years, articles dealing with the thymus have been appearing with greater frequency.

In 1891, when the present writer was a student of physiology, he recalls that when the special histological structure of the thymus was considered, its function was briefly described by the remark that it was lymphatic, and he was struck at the time by the paucity of knowledge about a somewhat large organ. Considering that the thymus only existed during growth and atrophied with it, the deduction that the gland influenced growth seemed a reasonable one. The determination was, therefore, made, when an opportunity presented itself, to investigate this problem by excising the thymus from young animals. It was quite expected that when this was done the growth of the animal would be interfered with. When, in Berlin in the summer of 1898, the writer proposed the investigation to the late Professor Hermann Munk, the remark was made that the operation was impossible, but could be attempted. (Neither the writer nor Professor Munk was then aware of the previous operations.)

A number of young rabbits (rabbits being chosen because they retain the thymus relatively longer than most animals) were dissected, and, when a method of procedure had been devised, extirpation of the gland from the living animal was proceeded with. When chloroform was employed as an anæsthetic, every young rabbit died before the operation could even be begun. With ether the results were better, but the greatest care had to be exercised in its administration, as young rabbits are very easily killed. It was found that rabbits younger than four weeks succumbed too readily to the anæsthetic, so that broods of about six weeks old were employed. The greater vitality of kittens in this respect induced an attempt to use them, but there were other drawbacks which rendered the operation more difficult. Having overcome the difficulty with the anæsthetic, the operative technique next gave trouble, firstly, on account of the hæmorrhage, and, secondly, on account of the opening of the pleural cavities. The latter accident when bilateral caused the immediate death of the animal. With extreme care, and after a little practice, this also was overcome, and now the operation can be performed without opening more than one pleural cavity at most; by a little arrangement of the sutures the chest wall can be closed rapidly, so that the danger from this source of trouble was minimised; the rupture into one pleural cavity did not mean the immediate death of the animal employed.

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[1] Read at a meeting of the Glasgow Medico-Chirurgical Society held on 21st February, 1908.

[2] Restelli, quoted by Friedeleben.

[3] Friedeleben, *Physiologie der Thymusdrüse*, Frankfurt, 1858.

[4] Hermann and Fournaux, article "Thymus," *Dictionnaire des Sciences Médicales*, 1887.

The operative method may be described as follows:—

1. The animal was anæsthetised with ether, and suitably fixed upon a board so as to render the thorax as prominent as possible.

2. The area to be operated upon was prepared in the usual way for operation. (In no single case did the wound become septic.)

3. The skin incision was usually about 1 inch long; the upper angle was placed a little above the sternum.

4. The sternum, with part of usually two costal cartilages, was cleared of its muscular attachments.

5. A fine silk suture was passed under each costal cartilage near its sternal end, and there tied as if the rib was being ligatured; the ends of the sutures were left long. (By this means the severed ends of the ribs could be quickly approximated after the thymus had been removed.) (Fig. 1.)

6. The sternum was then cut away from the ligatured ribs and divided. The sterno-thyroids were separated and the thymus quickly, though carefully, picked out. The gland usually came out entire—first the left, then the right lobe. The critical period was the removal of the right lobe. The

lungs were visible through the pleura, which is in rabbits about as thick as a soap bubble, and has about the same tenacity. The heart and main vessels were exposed.

7. The ends of the ligatures round the ribs were then tied so as to bring the apposing ribs together; the separated muscles were stitched to each other, and before the last suture closing the thorax was knotted, the air, by compressing the thorax, was squeezed out. A continuous silk suture closed the skin.

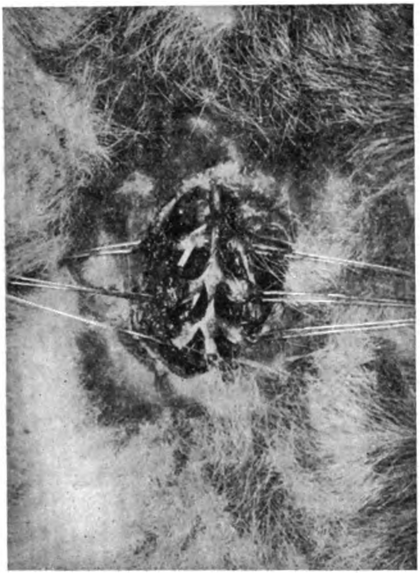

Fig. 1.

To show method of dealing with rib ends after removal of sternum

Artificial respiration was occasionally necessary at one time or other during or after the operation. Once, however, the chest was closed and the animal remained alive, little apprehension was felt for its recovery. In kittens the operation is more severe, on account of the heart being almost embedded in the thymus, and it is nearly impossible to get the entire gland removed in every case. The extra vitality of the kitten may cause it to survive even rupture of both pleuræ. They do not, however, thrive well in cages, and are, therefore, unsuitable for experiment under the Vivisection

Act. At no time was it ever observed that the animals were suffering pain; occasionally during the initial stages of the anæsthesia an animal squealed when it felt the overpowering influence of the ether. Probably the administration of an anæsthetic gives an animal "protected under the Act" more distress in certain instances than the operation would were it carried out without such an anæsthetic.

The results of the experiments.—1. *General.* Animals which survive the anæsthesia and the effects of opening the pleura recovered from the operation in a remarkably short time; a few hours suffice to obliterate all apparent effects of the operation, and it was then usually impossible to pick out the operated animal from the rest of the brood. After a few days even inspection of the chest failed to indicate the particular animal, and a special mark had to be put upon the animal employed. Within a few days the animal which had had its thymus removed was observed to be more vigorous and voracious than its brothers and sisters. This feature of the experiment was not a little surprising. In the Berlin series of cases the animals were attacked with favus in an

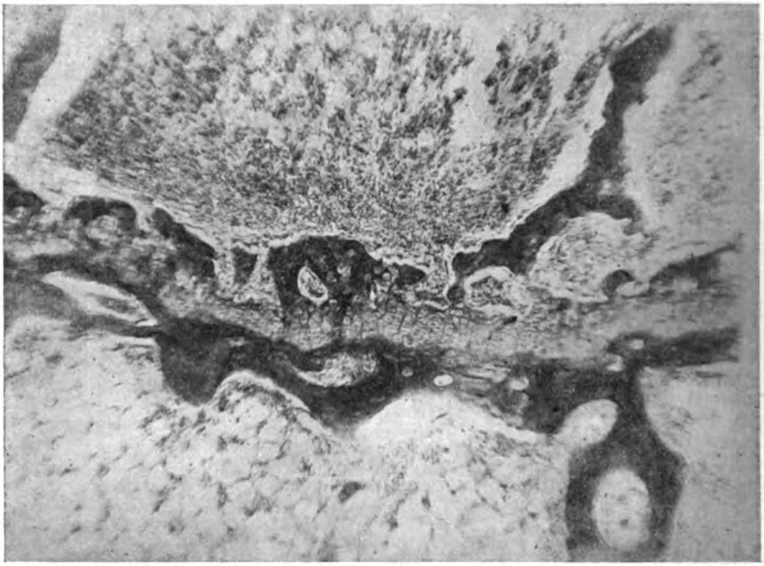

FIG. 2.

Epiphyseal line from control rabbit. (× 60.)

epidemic form, and it was markedly noticeable that the animals without their thymus showed a much greater resistance to the disease than the normal ones. In the animals used in this country the death-rate among the broods before any operation was performed, both in kittens and rabbits, was very heavy on account of enteritis, coccidiosis, or tuberculosis; after the experiments had been started it was almost invariably the control animals which became the first victims to disease.

The effect upon the weight of the operated animals was also marked. The increase in weight, as might have been expected from the greater consumpt of food by thymusless ones, was also apparent. It may be here stated that the particular animal in a brood was chosen to be operated upon because it was the smallest and puniest of the lot, so the results are more striking.

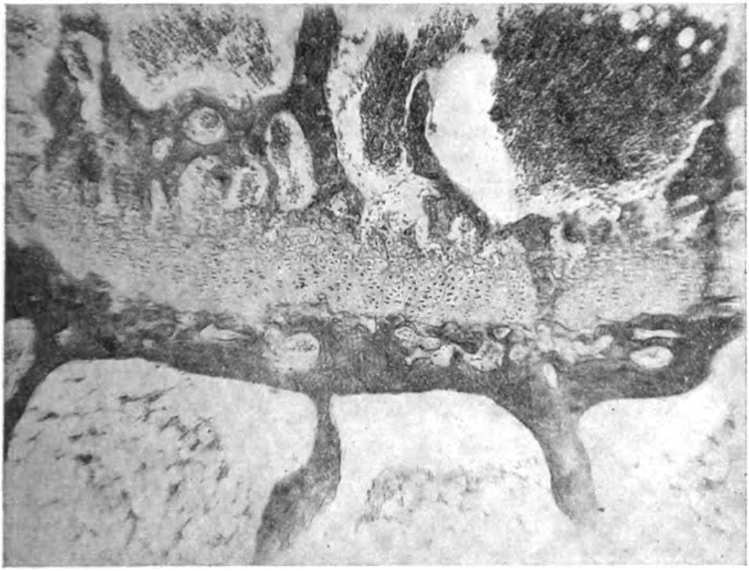

FIG. 3.
Epiphyseal line of thymusless rabbit. (× 60.)

2. *Special.* The spleen and bone marrow have been examined microscopically but with a negative result. Professor Muir kindly looked through the sections, but was unable to

note any differences between the marrow of the control and that of those operated upon.

The epiphyseal line was chosen as about the best index of the growth of the animal that could be demonstrated; the ends of the humerus and radius were taken. Fixation was done by formalin, alcohol, or Müller's fluid. Decalcification was carried out with hydrochloric acid; the pieces were embedded in celloidin. The sections were stained with hæmatoxylon and eosin, or in the former alone. From the series of photomicrographs taken for me by Dr. Leslie Buchanan, it may be observed in the thymusless that the cartilage is thickened, that there are a greater number of steps between cartilage cell and bone cell, and that there is evidence of greater activity of growth (Figs. 2, 3, 4, and 5).

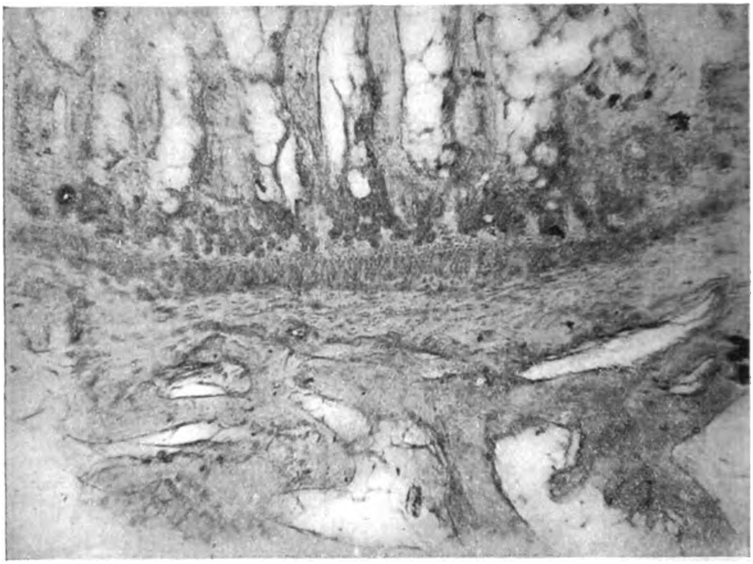

Fig. 4.

Epiphyseal line of control kitten. (× 60.)

In four of the animals there was evidence of rickets; two had been operated upon; two were control. The degree of rickets was equal in both sets.

The effect of removal of the thymus upon the thyroid has hitherto not been recorded, as far as the writer is aware. In the thymusless animals the thyroid was only to be found with difficulty, as it was smaller and lighter in colour than usual. Sections of the gland show in the thymusless the organ to be more cellular, to have larger adenoid masses, to have the glandular spaces smaller. The accompanying photomicrographs show the difference (Figs. 6 and 7).

Result of thyroidectomy upon the thymus.—In a thesis upon extirpation of the thyroid, Blumreich and Jakobi[1] incidentally found that the thymus disappears after removal of the thyroid. This fact is an important one. I have carried out a series of experiments, and am able to verify this statement of Blumreich and Jakobi.

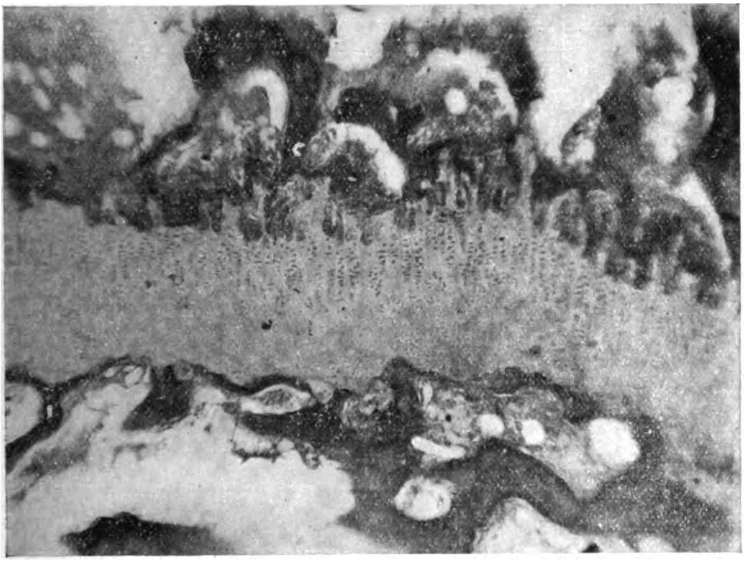

FIG. 5.

Epiphyseal line of thymusless kitten. (× 60.)

Other investigators have not had the same experience with extirpation of the thymus. Thus Mendel, Cozzolini, Carbone, and Fischl,[2] working with various animals, found extirpation of the gland to be harmless, to have no influence upon growth, and to be followed by no relative increase of weight. Noël Paton and Goodall,[1] working upon guinea-pigs, found that removal of the thymus produced no influence upon growth. The same workers also state that the thymusless animals resisted microbic toxins less than the control. Abelous and Billand [2] report weakness, paralysis, pigmentation of the skin, and other severe disturbances, such as hydræmia, œdema, hæmorrhage, &c., to follow extirpation of the thymus in frogs. The animals died from autointoxication, and the blood of such frogs was poisonous for other frogs. Transplantation of the thymus was useless to relieve the condition, but injection of thymus extract from the calf's thymus was beneficial. One-sided extirpation of the gland did not cause death. In frogs the thymus is essential, in guinea-pigs the removal is indifferent, and in rabbits and kittens beneficial according to the experiments of the writer.

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[1] Blumreich and Jakobi, Flügel's *Archiv*, 1897.

[2] Mendel, *Münchener mediz. Woch.*, 1902, No. 44, 1863; Cozzolini, *Münch. med. Woch.*, 1904, No. 13, p. 590; Carbone, abstract from Italian, *Centralblatt f. Allgemeine Pathologie u. path. Anatomie*, Bd. ix, p. 590; Fischl, *Münch. med. Woch.*, 1907, Nos. 45 and 46.

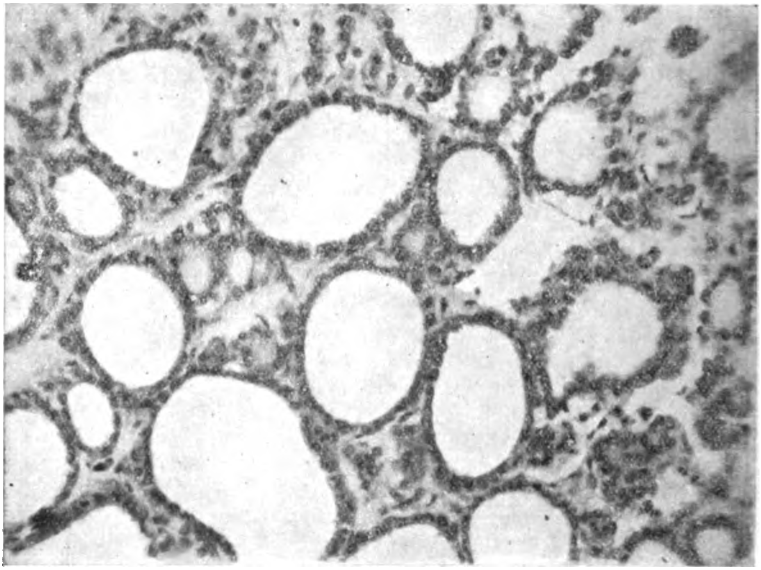

FIG. 6.

Thyroid from control rabbit. (× 300.)

Basch [3] found, after extirpation of the thymus, that fractured bones produced only a little thickening instead of a proper callus, and that the results were more like what takes place in fractured rickety bones. Simon[1] found, in hibernating animals, the enlarged thymus to be loaded with fat, and that the glands acted in those animals as a storehouse of material.

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[1] Noël Paton and Goodall, *Journal of Physiology*, 1904, vol. xxxi.

[2] Abelous and Billand, *Archiv. de Physiol.*, 1897.

[3] Basch, *Münch. med. Woch.*, 1902, No. 44.

The thymus in disease.—Mackenzie[2] has suggested that the enlarged thymus was the precursor of Graves' disease, and has stated that in this affection hypertrophy of the thymus is a very constant factor. These two statements lead one to the idea that the thymus might be the lymphatic gland specially associated with the thyroid, and that, in the young animal at anyrate. the thyroid requires to have its internal secretion modified for some time, or till the thyroid secretion becomes balanced by other permanent secretions. The hypertrophy of the thymus in Graves' disease might therefore be the attempt on nature's part to inhibit the action of the thyroid. Feeding those patients with thymus extract has been tried, but with only partial results. Mackenzie's results were negative.

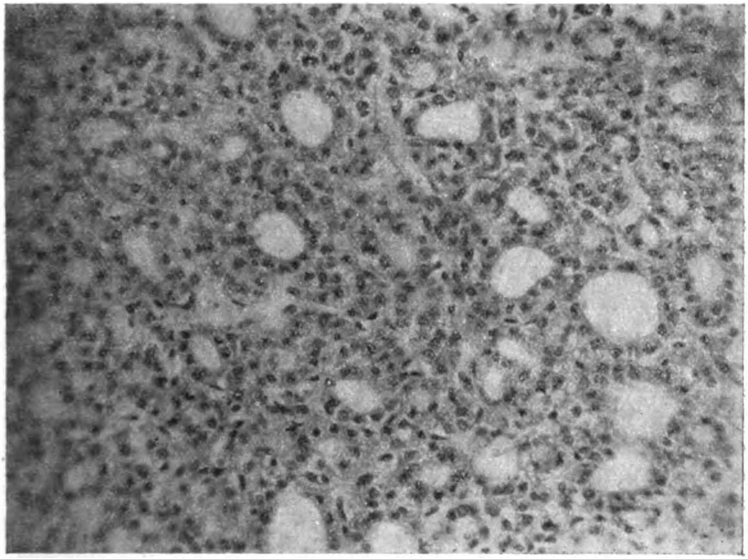

FIG. 7.

Thyroid from thymusless rabbit. (× 300.)

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[1] Simon, *A Physiological Essay on the Thymus Gland*, London, 1845.

[2] Mackenzie, *British Medical Journal*, 1905, vol. ii.

Beinfait[1] reports one success by the method. I would suggest that the method of ingestion might be at fault, and that an expressed serum be injected subcutaneously.

According to some observers, atrophy of the thymus was the only pathological lesion present in certain children who had died from marasmus, while, according to others, the reverse was found. Stokes, Ruhräh, and Rohrer[2] state that "atrophy of the thymus always accompanies infantile atrophy, and that its degree, both from weight and microscopic examination, may be taken as an index of the general nutrition of the body."

In pseudo-leukæmia the thymus has been found to be greatly hypertrophied along with the rest of the adenoid tissues. This supports the view that the thymus is lymphatic in nature.

The condition of the thymus in fatally terminating cases of laryngismus stridulus, or so-called thymus death (thymustod), has formed the subject of much debate, and a certain number of cases of sudden death in children have been so reported as to apparently leave no doubt that enlargement of the thymus was the cause of the fatal issue; but this, again, is explained away by others, so that at present it is as uncertain that an enlargement of the thymus is really the cause of all, or, indeed, of any, of the deaths in such circumstances as that marasmus is due to atrophy, or, on the other hand, to hypertrophy of the thymus. Ganghofer,[3] drawing attention to the teaching of Paultauf on the status lymphaticus, mentions that an enlargement of the thymus is only a concurrent sign which goes along with other conditions—changes in the cardiac centre, &c.—and this suffices to explain sudden death in children during the administration of chloroform or other anæsthetic, the injection of serum, or during bathing.

In the *British Medical Journal*, 1908, the relationship of the status lymphaticus to deaths under anæsthesia has been discussed, but the question is not yet decided. Friedeleben was very much opposed to the theory, and, according to Richter,[4] most present-day authorities follow his view.

The thymus in rickets.—Friedeleben found the thymus under normal weight in rickets. The atrophy or hypertrophy of the thymus in rickets is neither cause nor effect, but is accidental.

Sinnhuter[5] says that the thymus has no relationship to rickets, and that extirpation of the glands does not influence the excretion of lime. In connection with this view, that the thymus and rickets have some relationship, it may be remarked that some success has been achieved by feeding rickety children with raw thymus. All rickety children benefit from raw meat or raw meat juice; over and above this general action it may have a specific action as well. This has been the writer's experience in the treatment of rickets with raw thymus. Feeding young animals with thymus has produced no effect upon them, as has been shown by Bickel[1] and others. Other ductless glands, for instance, the suprarenals, have been suggested as being the cause of rickets.[2] Treatment of rickets by suprarenal extract has not had much success.

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[1] Beinfait, *Journal de Neurologie*, November, 1902.

[2] Stokes, Ruhräh, and Rohrer, *British Medical Journal* (Epitome), 7th February, 1903.

[3] Ganghofer, *Münch. med. Woch.*, 1902, No. 41.

[4] Richter, *Münch. med. Woch.*, 1902, No. 41.

[5] Sinnhuter, *Zeit. f. klin. med.*, 1904, Bd. liv.

Removal of the thymus as treatment.—The knowledge of the function of the thymus will be more advanced when the results of extirpation of the gland in the human subject have been established. Hammer[3] mentions that such operations as stitching of the thymus in an elevated position have been carried out by Purrucker and others for laryngismus stridulus. Cases of this nature have been reported from time to time.

Many years ago Nicoll, of Glasgow, removed the entire thymus from a child who presented, during coughing and straining, a swelling at the root of the neck. The swelling proved to be the thymus squeezed out of the chest. The child recovered, and was in perfect health two years afterwards. The writer has successfully excised the thymus from three young children, the subjects of stridor. In one case the symptoms began to clear up in a week; in the other two the improvement was less rapid, though progressive. The cases will be reported more fully at a later date.

Conclusions.—1. The thymus may be a lymphatic gland, but it is so specialised as to be virtually something more; it is one of the series of glands which by an internal secretion regulate the various functions of the body.

2. The gland is really an accessory one, for its function can be taken up by others. It is to be remarked that simultaneous extirpation of the spleen and thymus invariably ends in death. One would therefore infer that the spleen can carry on along with its other manifold functions those of the temporary thymus. Extirpation of the thymus does not give rise to hypertrophy of adenoid tissue elsewhere.

3. The function of the gland is temporary, for as growth

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[1] Bickel, *Münch. med. Woch.*, 1901, No. 49, p. 1992.

[2] Stoltzner, *Beiträge z. Pathologie des Knochenwachstums*, Berlin, 1902.

[3] Hammer, *Inaugural Dissertation*, Berlin, 1903.

advances the gland atrophies, though in man the gland never quite disappears till after puberty. There are cases on record, however, where there has been no thymus.

4. The thymus and the thyroid are closely associated developmentally, anatomically, physiologically, and pathologically. In two extirpations of the gland in the human subject I have found the thymus continuous with the left lobe of the thyroid. The results of experiments have shown that the thymus is unnecessary to the economy when the thyroid is gone, and when the thymus is removed less thyroid suffices. The importance of this relationship is apparent in certain diseases. Thus, there is a type of Graves' disease where extirpation of the thyroid is followed by sudden death, and on *post-mortem* examination the thymus is found enlarged.[1] An enlarged thymus is credited, certainly rightly in some cases, with being the cause of death in the so-called status lymphaticus, and after removal of the thyroid the enlarged thymus gives rise to the same conditions as produce the so-called thymus death. Therefore, in such cases, where thyroidectomy was deemed necessary in Graves' disease, the writer would recommend that the thymus be first sought for, and if enlarged be removed as a preliminary to the thyroidectomy.

5. In certain other diseases, notably laryngismus stridulus, thymusectomy has given good results. The result of thymusectomy is not mechanical, but due to the removal of the internal secretion of the thymus. In this disease and in children subject to "kinks," thymusectomy offers some hope of cure. In cretins, thymusectomy, by reducing the necessity for thyroid secretion, will be beneficial, and ought to be tried.

6. In children who present a fulness over the suprasternal notch during expiration, straining, or coughing, especial care ought to be taken during surgical anæsthesia, which ought to be of the lightest possible.

The writer would avail himself of this opportunity of acknowledging the assistance which he has received from many, and in expressing his thanks to them for their help. Part of the cost of this investigation has been defrayed by a grant from the Carnegie Trust.

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[1] Gierke, *Münch. med. Woch.*, 1907, No. 16.

CASE OF CHORION-EPITHELIOMA.[1]

BY GEO. BALFOUR MARSHALL, M.D.,
Gynæcologist, Glasgow Royal Infirmary.

THANKS to the excellent work of Marchand and others chorion-epithelioma has been assigned its proper place as a distinct pathological condition. I would also refer to the excellent monograph by Dr. Teacher on this subject in vol. iv of the *Journal of Obstetrics and Gynæcology.* It is a record of careful research, which is a credit to the Glasgow school, and reflects honour on this Society in which he holds the office of Pathologist.

There are, however, still certain problems to be solved, and with a view to this end careful and accurate reports of all cases should be recorded.

So many cases of this interesting tumour have now been reported that it is no longer considered very rare, yet this is only the second case I have met with amongst many thousands of gynæcological patients seen during the past eleven years in the Glasgow Royal Infirmary.

Mrs. M'G., aged 27, married five years, was admitted to Glasgow Royal Infirmary on 27th July, 1907. She has had two children, the last two years ago, and there is nothing noteworthy in her previous history till the present illness began. The doctor who sent her to hospital reported that when his patient was two and a half months pregnant uterine hæmorrhage began, and continued for six weeks, till 12th September, 1906, when she "was delivered of a large hydatidiform mole, filling an ordinary chamber pot quite half full." The patient stated that ever since then, *i.e.*, for a period of ten and a half months, she had more or less constant bleeding, the discharge never being absent for more than part of a day at a time. Clots were occasionally passed. She had never suffered any pain, but latterly complained of her great weakness. This is not to be wondered at considering the constant loss of blood over such a prolonged period, and when the patient was admitted to hospital she was poorly nourished, and looked very anæmic and ill.

Abdominal examination.—A soft, boggy tumour, of ovoid shape, and resembling a pregnant uterus, was easily palpated through the thin abdominal wall, rising nearly half way to to the umbilicus.

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[1] Read at a meeting of the Glasgow Obstetrical and Gynæcological Society held on 27th November, 1907.

Bimanual examination.—The uterus was felt to be enlarged to the size and shape of a three and a half months' pregnant uterus, and a had a soft, boggy consistency. It was smooth in outline and freely movable. The annexa showed nothing abnormal.

Diagnosis.—In view of the history of continuous hæmorrhage following on the abortion of a vesicular mole, a diagnosis of chorion-epithelioma was made, and a vaginal hysterectomy decided on should examination of the cavum uteri under anæsthesia confirm this.

Dilutation of the cervix occurred with extreme ease; indeed, I believe the finger would have sufficed. On introducing the finger a large placental-like mass was felt growing from the whole anterior wall, left side, and left half of posterior wall, including the fundus. More than half of the whole uterine wall was thus involved.

Operation.—The uterus and annexa were removed *per vaginam* by the clamp method on 29th July without any great difficulty. The patient, in spite of her wretched condition, stood the operation satisfactorily, and for the first forty-eight hours did exceedingly well, the pulse only thrice reaching 92. When the clamps were removed on the morning of the third day the pulse was 98 and the temperature 100·2° F. A few hours later the pulse began to rise, and when I saw the patient at 10 P.M. she had all the symptoms of a very acute septic peritonitis. The pulse-rate was now 144 and the temperature 102·6°.

I was at a loss to account for this sudden change for the worse, and had the patient taken into the theatre for examination. On removing the gauze packing it was found that there had been no attempt at the usual occlusion of the peritoneal cavity above. The stumps of the infundibulo-pelvic ligaments had retracted out of sight, bowel was visible above the vaginal vault, and a piece of omentum prolapsed into the vagina when the wound was exposed. This was the evident cause of the acute sepsis. The patient was placed in Fowler's position, the pelvic cavity well flushed with sterilised salt solution, and then loosely packed with sterilised iodoform gauze. Free stimulation was resorted to, but the patient got rapidly worse, and died next day at 12·30 P.M.

A *post-mortem* examination showed fatty degeneration of liver, heart, and kidneys. There had been no attempt at occlusion of the abdominal cavity by the usual peritoneal exudation above the gauze packing, so that when the broad ligament stumps retracted, as already mentioned, they carried sepsis with them, and set up a septic peritonitis, which, in a patient of such low vitality, proved fatal in twenty-seven hours.

Metastatic growths were carefully looked for in the lungs and other organs, but with the exception of three of the lower iliac glands on right side none were found.

In looking over a record of 105 cases in which *post-mortem* examinations were made, I found that in only 10 were no metastatic growths found. It may thus be stated that in fully 90 per cent of cases, if not more, metastasis occurs, and in over 70 per cent the lungs are affected.

Specimen (macroscopic).—The whole uterine cavity is filled with a dark red placental-like mass, which has invaded the uterine wall half through when shown on cross section. Microscopic sections of the tumour were shown, as also a section of one of the iliac glands. The sections showed the usual characters of chorion-epithelioma, Langhans' cells, large cells, and syncytial masses. Langhans' cells are also seen to invade the muscular wall of the uterus. Sections from the tumour farthest from its attachment only showed blood and fibrin. A section of one of the iliac glands showed a small group of Langhans-like cells.

Summary of post-mortem appearances (reported by Dr. MacFarlane).—Retraction of tissue where the clamps were applied; marked peritonitis; heart, liver, and kidneys showed fatty degeneration; lungs free; two iliac glands on the right side partly involved. In sections of the ovaries no excess of lutein cell tissue was observed.

CASE OF RARE PELVIC TUMOUR IN A CHILD OF FOUR YEARS.

By THOMAS KAY, M.B., C.M., F.F.P.S.G.,
Assistant Surgeon, Glasgow Royal Infirmary.

This case is interesting from the fact that a large pelvic tumour was present in the patient's abdomen, and must have been there for a considerable time, without giving rise to any symptoms, at least any that were observed by his relatives.

The following is a short history of the case:—In August, 1905, the boy was taken for a holiday to the country, apparently in the best of health. The same afternoon he had to be brought to town, suffering considerable pain, and unable to pass urine. He was seen by a doctor in the evening, who, recognising that the case was urgent, sent it at once to one of the infirmaries. The urine was drawn off there by catheter for several days. On examination being made a tumour was discovered in the pelvis. The patient was put under chloroform for further examination, and it was then decided that the tumour was a sarcoma arising from the pelvis, and not suitable for operation. After a few days' residence in the hospital the patient was sent home again, where he was seen by his family physician, who had to pass a catheter several times daily. The doctor spoke to me about the case, and I asked him to send the patient into the Glasgow Royal Infirmary, but not with much hope that anything could be done. When the child was seen in the infirmary the following morning he seemed well nourished and in a fairly healthy condition. The bladder was distended, and a hard oval swelling could be made out slightly to the left of the middle line, and passing down into the pelvis. The following day a rectal examination was made under chloroform, and it was found that the tumour was arising from the sacrum, and pushing the rectum in front of it, and narrowing the lumen of the bowel very considerably. The patient was kept under observation for a few days. Occasionally he passed a few drops of urine, but a catheter required to be passed several times daily. He had also constipation, the stools having a flattened appearance; the father said the patient had suffered from constipation for some time. As the child was suffering very considerable pain, and there was apparently no hope of any improvement, I thought it would be quite justifiable to open the abdomen to see if there was any chance of removing the tumour. A catheter was passed immediately before the operation, and 8 oz. of urine withdrawn. The abdomen was opened in the middle line, between the umbilicus and the pubis. When the peritoneum was divided, a fluctuating swelling, which looked like a thin-walled cyst, appeared. A catheter was again passed to make sure that the bladder was empty; no urine was returned. On further examination the fluctuating swelling was found to be attached to the bladder, and was about 4 inches in length and 2 in diameter, and was evidently a loculus of that organ. A trocar was passed, and about 6 or 7 oz. of clear, slightly straw-coloured fluid withdrawn. The opening was then closed, and an examination made of the tumour in the pelvis. This was found to arise from the sacrum, to which it was firmly fixed. It was about the size of a large orange, slightly oval in shape, and perfectly smooth in outline. There was no involvement of the peritoneum, which was pushed in front of it. I cut through the peritoneum, and exposed the tumour as far as possible, but found that it would be impossible to remove it *en masse*, so I divided it vertically in two right down to its attachment. There was very little hæmorrhage. Each half was then removed separately. There was considerable difficulty in accomplishing this on account of the narrowness of the pelvis. The wound which had been made in the peritoneum posteriorly, to expose the tumour, was closed, and the abdominal wound closed, no drainage being left. For a few days a catheter had still to be passed, and then the patient began to pass urine normally. The bowels also became normal in their action. On examination the tumour was found to be a fibrolipoma. When I saw the patient about a fortnight ago, more than two years after the operation, he was in perfect health, attending school, and nothing could be made out by abdominal examination.

Micturition and defæcation had been quite normal since his dismissal from the infirmary.

About two months ago I removed from the axilla of a boy of 4 a tumour of almost the same size and microscopical appearance as the one described above.

CURRENT TOPICS.

Western Infirmary Appointment.—Dr. J. King Patrick has been appointed one of the anæsthetists to the infirmary.

NEW PREPARATIONS, &c.

Torpor (J. S. Kerr, Heriot Hill, Edinburgh) is a local anæsthetic, containing cocaine, carbolic acid, adrenalin, and iodine. The cocaine is present in a strength of 1 per cent. Torpor is quite effective for extraction of teeth, and appears to keep well.

MEETINGS OF SOCIETIES.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.

Session 1907-1908.

Meeting XIV (*continued*).—3rd April, 1908.

The President, Dr. Walker Downie, *in the Chair*.

VII.—CASE OF MARKED HYDROCEPHALUS IN A CHILD AGED 3 YEARS (OPERATED ON AT AGE OF 6 DAYS FOR A LARGE LUMBO-SACRAL SPINA BIFIDA).

By Mr. Arch. Young.

J. H. was seen by me at the Western Infirmary Dispensary on 20th May, 1905. The child had been born two days before, with a large lumbo-sacral spina bifida. The skin over the sac showing considerable sloughing, operative interference was deemed advisable. Accordingly, on 24th May, the whole sac was excised, flaps of dura were turned in and sutured, and the lateral skin margins were freed on each side, drawn over the dural line of union, and sutured in close apposition. The nerves of the cauda were stretched out over the inner surface of the sac, and required careful separation. They were disturbed as little as possible, and were laid in the floor of the reconstructed canal. The end of the cord was not identified. The immediate after-course was uneventful. The child appeared at that time to be in every other way normal, well developed, and healthy. The head was not altered in any notable way from the normal. The lower limbs were moved freely by the child. There was some want of control, both of bladder and bowels.

Healing took place by first intention, and I lost sight of the child after the first month or two, until ten months after, when Dr. Cowan was consulted at the Western Infirmary by the child's mother on account of progressive increase in size of its head. Dr. Cowan sent the child back to see me. When seen then (20th March, 1906) the child was found to have an extreme degree of enlargement of the whole cranium. The fontanelles were widely open, as were all the sutures of the vault; the veins of the scalp were prominent and distended. The enlargement, evidently due to hydrocephalus, had begun to develop, I ascertained, when the child was 5 months old, and had increased with considerable rapidity.

In other respects the child was healthy, took food well, slept well, and seemed to have normal visual power. Though the mother maintained that the bowels and bladder were controlled normally, some irritation of the skin about the anus, and of the penis and scrotum in front, suggested the contrary.

A considerable degree of phimosis existed, and this led to the development of a very troublesome balanitis, which, in October of last year (16th October, 1907), required to be dealt with by active operative means. A very acute, sloughing, suppurative condition was present, and even after the prepuce was laid freely open the parts took long to recover. Even yet, indeed, the preputial margins and the glans surface are somewhat excoriated, though the improvement has been very great.

The condition now is as follows:—The hydrocephalic condition has not increased perceptibly during the last six months. Indeed, it seems rather to have retrogressed. In addition, the ordinary growth of the child having proceeded satisfactorily, the disproportion between the head and the body has become much less pronounced. The anterior fontanelle is still patent, but is not large. The sutures can still be felt, but they are not now marked by any wide separation of the bone edges. The child seems to be remarkably intelligent, takes interest in everything around it, is able to speak quite freely, seems to have ordinary visual power, and of late has begun to exhibit purposeful movements of its lower limbs. Though not yet able to walk unaided, he can stand by himself, and makes some attempt at movement. The bowels are apparently fairly under control, and move once or twice daily. The bladder control is said, by the mother, to be quite normal, though the preputial condition does not altogether warrant this claim. One statement, however, on this point is worthy of note, viz., that, not infrequently, on being lifted out of bed in the morning the child is found quite dry, no urine having been passed for the eight to ten hours during the night. Urine is passed voluntarily three or four times in the course of the day. The scar of the old spina bifida operation is firm. In every way the child is much better than when seen by me two years ago, and the hydrocephalic condition is certainly not now advancing. The age of the child is now almost 3 years.

The family history is not of importance. There are two other children—one 5 years old, one now almost 2 years. They are healthy. The parents also are healthy.

The case is shown to-night chiefly for three reasons—(1) As an example of the now well-recognised relation between spina bifida and hydrocephalus, and as suggesting some common congenital, or ante-natal, cause for both; (2) as an example of fairly satisfactory maintenance, and even improvement, of function following the preservation of the stretched-out nerves in the spina bifida sac; (3) in view of the problem as to the proper line to adopt in the treatment, surgical or otherwise, of a case of chronic hydrocephalus.

Regarding the last of these, it seems on the whole questionable whether, in view of the cessation of advance in the hydrocephalic condition, and the remarkable absence of mental or cerebral disturbance, any active interference is now called for, or would be, indeed, justifiable in the case under consideration.

VIII.—GREATLY ENLARGED RETRO-PHARYNGEAL GLAND.

By Dr. Walker Downie.

In the majority of text-books on surgery, post-pharyngeal abscess is described as being due to caries of one or more of the cervical vertebræ. In my own experience, I think that this, as a cause, is the exception; and, further, I have found that the majority of such cases coming under my care, and they are fairly numerous, are due to an infective suppurative process in one or more of the deeply-seated cervical or retropharyngeal glands.

The patient I show to-night has prominent swellings on the left side of the neck, due to enlargement of several of the cervical glands, and when the pharynx is examined, a well-defined glandular swelling is seen projecting from the lateral and posterior walls of the pharynx on the right side. This, if permitted to break down, would form a post-pharyngeal abscess. I propose here to enucleate the gland *per viam naturalem.*

IX.—OPERATIVE TECHNIQUE IN SEPARATING WEBBED FINGERS.

By Dr. Alex. MacLennan.

Various operations have been devised to separate web fingers, but the one I prefer is a modification of that of Zeller. The first case done by that method gave such an excellent result that I have seen no reason to depart from it. The case was shown to the Glasgow Medico-Chirurgical Society in January, 1904; a second case was shown in April, 1904 (*vide Transactions*, vol. v).

There are certain details which go to make the operation a success, and these may be referred to. The accompanying figures illustrate the steps, which may be described as follows:—A Y-shaped incision (Fig. 1) is made dorsally, and carried round to the palmar surface as far as the heads of the metacarpal bones. The stem of the Y separates the fingers, giving to each that which rightly belongs to it. The separation extends to the knuckles, the dorsal angular flap being reflected meantime out of the way (Fig. 2). In most cases it will then be found that the edges of the skin are incapable of approximation, so the thickness of the fingers has to be reduced. This is done by dissecting away the subcutaneous fatty tissue which forms the floor of the newly-made wound. The edges of the skin are undercut. The digital vessels are usually removed, and in some cases the nerves also. The point of the angular flap is then stitched to the palmar end of the anterior incision (Fig. 3). The rest of the wound is closed by uniting the dorsal and palmar margins. In doing this, means must be taken to prevent

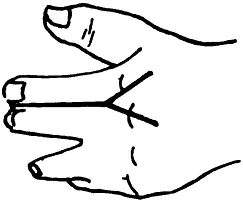

Fig. 1.

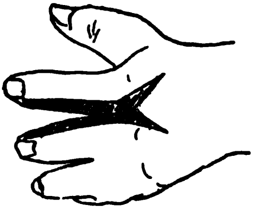

Fig. 2.

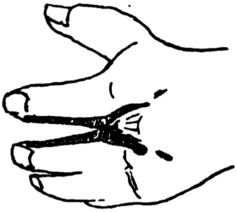

Fig. 3.

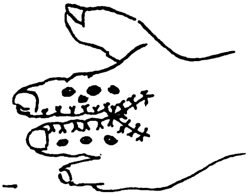

Fig. 4.

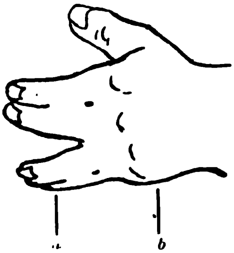

Fig. 5 (*drawn from Photograph*).
(*a*) Little finger curled under ring finger; (*b*) knuckles.

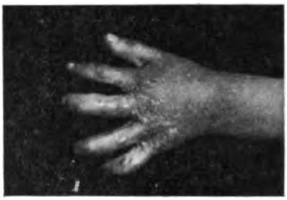

Fig. 6.
The same hand as Fig. 5. Taken two and a half years after operation.

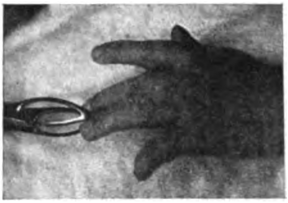

Fig. 7.

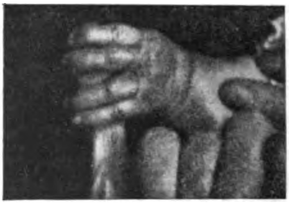

Fig. 8.
The same hand as Fig. 7. Taken five months after operation.

little processes of fat from protruding between the cut surfaces, as these delay union and leave the function of retaining the edges in apposition solely to the stitches for too long a period.

After stitching is completed, it is usually found that the fingers are so seriously constricted at various parts that they are more or less anæmic. Little incisions are therefore made through the constrictions (Fig. 4), and the benefit of such becomes quickly manifest in the return of the pink colour to the fingers. A final dressing must in no case be put on till the circulation has become restored. As the dressing cannot be tightly bandaged on, it has a tendency to be thrown off, so adhesive strapping is applied on either side to fix it to the arm higher up. Figs. 5 to 8 show the result in two cases done by this method. Where more than two fingers are webbed, a requisite interval must be allowed to elapse between the operations separating each pair.

X.—CASE OF VERY LARGE AMYLOID LIVER IN A BOY, 9 YEARS OF AGE.

By Dr. Edward Wright.

The patient, Malcolm M'C., who had been healthy, though not robust, previously, fell off a chair in October, 1901. He suffered great pain at the time. His sister, who was playing with him, heard a crack when he fell. He was doubled up between the chair and the wall, and from that time was constantly complaining about his back. His father brought him to two or three doctors, who failed to find any serious injury. About two and a half years after fall, a slight swelling was noticed on the upper part of the back, and he was then taken to the Dispensary at the Glasgow Royal Infirmary. The physician sent him to a surgeon, at whose request he was taken to the Royal Hospital for Sick Children, and, after examination, the parents were informed that it was spine disease. From that time he has been gradually getting worse, and the prominence on the back more marked.

He was first seen by me in May, 1907, when on examination I found symptoms of caries of the spine, and also that he was suffering from phthisis pulmonalis. He had a bad cough, and was much emaciated. I gave a cough mixture, and also tried ol. morrh. and syr. ferri phos. co., but this latter did not agree with him, and so I changed it to emulsion of ol. morrh. with hypophosphites, and this he has continued to take since then.

Some time after he complained of pain in the abdomen on the right side. I made an examination, and found the liver greatly enlarged, extending down to the pubes, filling the right iliac fossa, and passing across to the left side to about a line with the left nipple, so that practically the whole of the abdomen was filled with the enlarged liver, except the left flank and a small portion of the front to the left above the iliac fossa. The margins in front and at left side are very distinctly felt on palpation, and the notch passes upwards just below the umbilicus. It measures 9 inches from above downwards, and 14 inches from side to side. He complains of tenderness over the left lobe, and also over the spine. The kidneys are enlarged, the left being quite palpable and tender on pressure.

He has had one attack of diarrhœa since coming under my care, and used to suffer from a good deal of pain, and also from periodic attacks of epistaxis. The pain does not trouble him now, and the epistaxis has also ceased. The father and mother are quite healthy, and also two sisters and a brother. The right lung appears to be practically gone, and pectoriloquy can be heard on both sides of the spine, as well as on the right side in front. There is a slight amount of albumen in the urine.

[*June, 1908.*—He is now failing rapidly, and cough is very troublesome.]

XI.—CASE OF HYPERTROPHIC STENOSIS OF THE PYLORUS IN AN INFANT 8 WEEKS OLD.

By Dr. W. K. Hunter.

Dr. Hunter's communication is published as an original article in our issue for July, 1908, p. 5.

XII.—SKIAGRAM FROM A BOY, AGED 9 YEARS, SHOWING CERVICAL RIBS.

By Dr. W. K. Hunter.

This patient came to the Royal Hospital for Sick Children complaining of a cough, and it was when examining the chest that the cervical ribs were discovered lying in the right and left supraclavicular areas. There were no symptoms whatever as of pressure on any of the fibres of the brachial plexus. However, symptoms due to pressure of a cervical rib have never yet been found in one so young as this boy, so that we cannot assert that when he reaches manhood he will not suffer from the characteristic symptoms of pressure on the eighth cervical and first dorsal roots, as have been recently described in so many other such cases.

XIII.—PHOTOGRAPH OF A CHILD WITH AN EXTREME DEGREE OF HYDROCEPHALUS.

By Dr. W. K. Hunter.

The child was 4 months old when the photograph was taken, and the history given by the mother was to the effect that the head was large at birth, causing some difficulty with the delivery. A very great increase, however, in the size of the head had taken place during the past (the fourth) month. The measurements were as follows:—Circumference, 27 inches; fronto-occipital measurement, 19½ inches; from ear to ear, 16 inches.

The child was extremely cross, and cried so much that it was dismissed from the ward on account of the disturbance to the other patients. Its subsequent history is not known.

XIV.—**Dr. H. Rutherfurd** showed—

1. A specimen showing congenital obstruction from passage of a loop of ileum through an aperture in the mesentery.
2. The appendix from a child, aged 3½ years, showing the presence of a concretion, and the relation of this to slough formation (longitudinal section for microscope).

XV.—**Dr. Alex. MacLennan** gave a demonstration of various surgical tubercular affections in children by means of coloured stereo-photographic transparencies.

XVI.—CARD SPECIMEN.

Dr. H. E. Jones showed the normal uterus and adnexa from an infant, aged 2 days.

MEETING XV.—1ST MAY, 1908.

The President, DR. WALKER DOWNIE, *in the Chair.*

I.—THE PATHOLOGY AND TREATMENT OF ATROPHIC RHINITIS.

BY DR. JAMES ADAM.

[ABSTRACT.]

Dr. Adam described atrophic rhinitis as the end-stage of hyperplastic purulent rhinitis—that is, of a septic process in which infiltration of round cells went on to fibrosis, and in which there was already in the hyperplastic stage metaplasia of the epithelium. In support of this view, he adduced the frequency with which purulent hyperplastic rhinitis occurred in the children of mothers suffering from atrophy and ozæna, the histological changes of atrophy in these cases and the same changes in the turbinals of cases of simple chronic sinusitis, and also the frequency (over 50 per cent) of sinusitis in both stages of the disease. Sinusitis should be suspected in every case, and negatived only after repeated careful examination. Sphenoidal sinusitis was very frequent with atrophic pharyngitis. Hypertrophic rhinitis was histologically quite distinct, and did not go on to atrophy. Ozæna was merely an accidental symptom. Treatment by paraffin injection and by ionisation gave good results, but the best treatment was that of the hyperplastic stage in the young and the early treatment of sinusitis.

[This paper is published *in extenso* in the *British Medical Journal.*]

Dr. Kerr Love thought atrophic rhinitis would be much more common if it developed from hypertrophic rhinitis. It was probably more often connected with a purulent nasal discharge occurring in childhood than due to any congenital defect in the skull. Treatment by alkaline douches and antiseptic swabbing was practically sufficient in cases not complicated with sinusitis. The newer methods have not been tried sufficiently long to enable us to judge of their efficiency.

Dr. Adam replied that true hypertrophic rhinitis did not go on to atrophy, but hyperplastic cases generally did. In reply to a question by Dr. Christie, he (Dr. Adam) said that ozæna was not a good name, as its presence was accidental, and merely depended on whether putrefactive organisms happened to be present or not. The odour from cultures of Abel's bacillus was perfectly distinctive.

II.—INTER-ILIO-ABDOMINAL AMPUTATION.

By Mr. J. H. Pringle.

A patient (male), aged 19 years, had amputation at upper third of left femur in November, 1906, for sarcoma. He complained of pain in left gluteal region in January, 1908, and four weeks later a rounded tumour, about the size of a golf ball, was found at side of origin of the hamstring muscles, and which was the cause of intense pain. The stump of femur, with left innominate bone, was removed under spinal anæsthesia on 6th February, 1908. The patient made a good recovery, and the stump is strong, without any tendency to hernia.

The operation has apparently only been carried out on a few occasions, and was first done by Billroth. Only twenty-one recorded cases can be found, the patient surviving the operation on five occasions only.

III.—NOTE ON THE COURSE OF THE CEREBELLO-OLIVARY FIBRES, AS DEMONSTRATED IN A CASE OF TUBERCULOSIS OF THE SPINAL CORD AND MEDULLA.

By Dr. T. K. Monro and Dr. Leonard Findlay.

Drs. Monro and Findlay's communication is published as an original article in our issue for July, 1908, p. 1.

Dr. Hunter referred to a similar case. He thought it very rare to find tuberculous tumours actually in the spinal cord. The nodule, in his case, was quite central, and spread to the surface, setting up a meningitis.

IV.—CASE OF RHEUMATIC HYPERPYREXIA SUCCESSFULLY TREATED BY THE COLD BATH.[1]

By Dr. T. K. Monro.

Mrs. M., æt. 23, was admitted to the Glasgow Royal Infirmary on 9th January, 1908, on account of pains in different joints, which had begun to trouble her about a week earlier. She had previously been a patient in the ward (6th February to 1st March 1901), with an attack of rheumatism, from which she made a good recovery under treatment by sodium salicylate in doses of 15 grains every four hours.

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[1] An earlier case was reported to the Glasgow Pathological and Clinical Society on 7th February, 1898.

On the present occasion there was at first nothing remarkable in her condition. There was fever, with acceleration of the pulse and respirations, sweating, and a faint trace of albumen in the urine. Sodium salicylate was given in 20 grain doses, but had to be stopped on the morning after the day of admission (10th January) on account of tinnitus. She wept that morning about her children, and during the day she passed the evacuations in bed. She got two doses of salicylate at night, and she had still a little pain in the joints when the last dose was given at 8 P.M. She became noisy that evening, and became still worse during the night. From 7·30 A.M. on the 11th she was very ill—tearing at the clothes, talking, trembling, breathing deeply, and objecting to being turned in bed for examination. The pulse was rapid, and could scarcely be counted at the wrist, and the temperature had been rising. At 9·30 A.M. it had reached 106·9°. Nothing definitely abnormal was discovered in the chest.

Patient was put into a warm bath, which was cooled to 61° by the addition of ice and cold water. Her temperature rose at first to 107°, and for a considerable time remained obstinately febrile, but when she was taken out of the bath, after thirty-two minutes' immersion, it had fallen to 101·5°. Patient remained unconscious all day, her temperature continuing febrile. From that evening onwards she seemed to get periods of sleep.

On 12th January it was noted that she was conscious and felt much better, though she was still disposed to talk to herself. She had also regained control of the evacuations. She said she had no pain, but the temperature was still over 102°.

About the 18th there was some return of arthritis, and the temperature was still febrile. Intelligence was now completely restored. The heart remained healthy. The fever subsided when salicylate was resumed on the 29th (15 grains thrice daily).

On 6th February there was noted a short A.S. mitral murmur, and also a suspicion of a V.S. murmur at the tricuspid area.

She was dismissed well on 21st February.

V.—CARD SPECIMENS.

BY DR. T. K. MONRO.

1. *Kidney from a man, æt. 63, who had only one kidney and ureter, and who died of chronic interstitial nephritis.*

Wm. M., admitted to the Glasgow Royal Infirmary on 13th October, 1907. Duration of last illness, three months; symptoms, &c., dyspnœa, anasarca, râles in chest, urine albuminous with abundant casts, &c.

Post-mortem.—Great hypertrophy of left ventricle; heart weighed 21 oz. No right kidney or ureter. Left kidney weighed 8 oz.; capsule adherent; cysts in cortex. Right suprarenal body healthy. No mark of operation-wound.

2. *Heart showing obstruction of the tricuspid orifice by a large globular thrombus; from a case of endocarditis and gangrenous pneumonia.*

Patient (Mrs. L.) was a married woman, æt. 23, who became ill with febrile symptoms eight weeks before death. Consolidation of the right lower lobe was recognised about two and a half weeks, and a very short A.S. murmur about two days, before the end.

Post-mortem.—Slight aortic endocarditis with great incompetence. Huge, globular, vital thrombus adherent to tricuspid valve, and almost blocking the orifice. Mitral valve and pericardium healthy. Gangrenous pneumonia of right lower lobe. Weight of spleen, 17 oz. Each lung consists of only two lobes.

3. *Sections prepared by Dr. Mary B. Hannay from a case of acute myelitis with secondary degenerations.*

Patient (M. M., æt. 60) became ill with headache, &c., on 5th March, 1907. Within a few days had weakness of legs and retention of urine. Other symptoms were defect of sensation, exaggeration of knee-jerks, bedsores, and cystitis. Later, delusions, &c. Scoliosis present from childhood. Admitted to the Glasgow Royal Infirmary on 26th April; died on 28th July, 1907.

Post-mortem.—Scoliosis included an acute angle to right at sixth or seventh dorsal vertebra. Nodule, probably healed tuberculosis, at base of right lung. Recent fracture of eighth and ninth right ribs, 4 or 5 inches from their heads; ribs very soft and brittle. Cystitis and consecutive nephritis. Vessels at base of brain healthy.

Mid-cervical region.—Sclerosis confined to postero-median columns, and less marked in each direct cerebellar tract (both indicate ascending degeneration).

Upper dorsal region.—Sclerosis in almost the whole of the posterior columns, and also at the periphery of the lateral columns posteriorly, forming a patch which extends into each crossed pyramidal tract. These patches are asymmetrical, and indicate a focal myelitis.

Lower dorsal region.—Sclerosis in both crossed pyramidal tracts (descending degeneration) and at the periphery of the posterior columns (focal myelitis).

Lumbar region.—Sclerosis in crossed pyramidal tracts only (descending degeneration).

OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

SESSION 1907-1908.

MEETING II.—27TH NOVEMBER, 1907.

The President, DR. E. H. L. OLIPHANT, *in the Chair.*

I.—SPECIMENS.

BY DR. G. BALFOUR MARSHALL.

1. Chorion-epithelioma of uterus with microscopical sections of uterine wall, ovaries, and iliac glands.
2. Lutein cysts with microscopical sections of cyst wall.

II.—VASCULAR CHANGES IN UTERINE FIBROIDS.

BY DR. S. J. CAMERON.

Dr. Cameron's paper will appear as an original article in a future issue of the *Journal.*

Dr. Balfour Marshall thought clamping of the round ligament a very necessary precaution during removal of uterine fibroids; personally he had no experience of hæmatoma forming from the round ligament. He described a case of a uterine fibroid where the large blood-vessels sprang from the omentum and entered the tumour, having the appearance of a ureter. He had not heard a souffle over ovarian tumours.

Dr. Louise M'Ilroy referred to the difficulties in staining sections of fibroid tumours and of distinguishing between innocent from sarcomatous growths.

The President thanked Dr. Cameron for his interesting communication, and said in his experience elevation of temperature did not frequently accompany necrobiotic changes. He had never seen a hæmatoma from round ligament bleeding. With regard to the capsule of fibroids his observations were that in the rapidly growing red tumours there was no separable capsule; in the ordinary slowly growing fibroids the capsule was well marked. He referred to a case where he had divided a vessel passing from a uterine fibroid up towards the kidney; at first it was supposed to be the ureter, but it proved to be a greatly enlarged blood-vessel.

Dr. Cameron replied briefly.

III.—CASE OF CHORION-EPITHELIOMA.

By Dr. G. Balfour Marshall.

Dr. Marshall's note will be found as an original article at p. 109.

Dr. M'Lellan asked if vaginal hysterectomy had been performed on account of the patient's condition, and if it were to be preferred to the abdominal method.

Dr. S. J. Cameron referred to a case of chorion-epithelioma under his care where the fundus had been eroded by the new growth, the omentum being adherent and thus shutting off the disease.

Dr. Marshall, in replying, said he had performed vaginal hysterectomy on account of its rapidity, there being less shock and the results being favourable compared with the abdominal method.

IV.—CORPUS LUTEUM CYST.

By Dr. G. Balfour Marshall.

Corpus luteum cysts which have reached any size are of sufficient interest in themselves to show to this Society, but the following case deserves more than a passing notice, not only owing to the symptoms of which the patient complained, but more especially as illustrating the risk from hæmorrhage which may arise when even a comparatively small ovarian cystoma is ruptured during examination.

Mrs. M., aged 26, was admitted to the Glasgow Royal Infirmary on 30th September, 1907. Menstruation, which began at the age of 16, lasts three days, and has always been irregular, the type varying from 31 to 35 days.

Married at 19, the patient had two children during the first two years, and seems to have enjoyed good health till her husband died three years ago. Since then she has suffered from leucorrhœa and dysmenorrhœa. The pain, which is labour-like in character, is only felt during the twenty-four hours preceding the onset of the menses, but during the first day of the flow there is a feeling of weakness in the lower limbs, and a sensation of what the patient described as pins and needles.

Although the patient had complained of this dysmenorrhœa, and of not feeling strong since her second marriage one year ago, the symptoms which brought her to seek relief only commenced four months ago, and may partly have been dependent on the presence of a corpus luteum cyst of the right ovary. The patient believed she was pregnant, even although no menstrual period had been missed, as during the past four months she had stinging pains in both mammæ, as also morning sickness in the form of nausea. She had not noticed any abdominal swelling, but for the past two months had sensations of quickening in the lower abdomen, which confirmed her in the belief that she was pregnant. This sensation was no doubt due to flatulence, which not infrequently makes a woman imagine she is pregnant.

For a few months micturition had been preceded by a sharp stinging pain referred to the right groin, which lasted till the bladder was emptied, and sometimes inhibited the act. Examination of the urine proved it to be normal.

The following note was made at the first examination:—Abdominal examination negative. Cervix bilaterally split nearly to fornices; lips everted and catarrhal. Bimanually, the uterus is felt to be in normal position, but markedly enlarged. The abdomen is kept so rigid that palpation of the adnexa is impossible. Dr. W. D. Macfarlane, who had previously examined the patient in the dispensary, had experienced the same difficulty.

A provisional diagnosis of metro-endometritis was made, and it was decided to curette should examination under anæsthesia prove the adnexa to be healthy.

The patient was examined on the following day under chloroform anæsthesia, when a tense, cystic, rounded tumour, of the size of a tangerine orange, was felt to the right of the uterus. It was smooth in outline, freely movable, and evidently ovarian in origin; but to confirm the diagnosis, Dr. Macfarlane pulled the uterus down, while I palpated bimanually. During this manœuvre the cyst suddenly burst and collapsed. The discharge of the cyst contents was so sudden and complete that I inferred a large rent must have beeen made, so decided on immediate laparotomy. The abdomen was opened as soon as the patient's skin was cleansed, when a considerable amount of blood was found in the peritoneal cavity, and the torn edges of the cyst were seen to be bleeding freely. The presence of adherent blood-clot in the cavity of the cyst, and the evident great vascularity of its wall, gave the impression that the specimen was an example of ovarian gestation, so it was carefully removed along with the tube.

The peritoneal cavity was swabbed clean of all blot-clot, and 2 pints of saline poured in.

The patient made an uneventful recovery, and was sent home seventeen days after operation.

The specimen was shown, as also microscopic sections taken from different parts of the cyst wall. The cyst was lined internally by lutein cells next a layer of highly vascular connective-tissue.

Dr. Louise M'Ilroy had a similar experience of a small hæmorrhagic cyst of the ovary rupturing during examination, the condition being verified by abdominal section for suspension of a retroflexed uterus.

Dr. Cameron had two cases of hæmorrhage from ruptured ovarian cysts; one did well after operation, the second was discovered on *post-mortem* examination.

Dr. Macfarlane said this case of Dr. Marshall's was his second experience of hæmorrhage from a ruptured cyst. He briefly described the difference of arrangement of the tissues in lutein cysts as seen on microscopical examination.

Dr. Balfour Marshall replied.

V.—NOTE ON CASE OF REPEATED TWINNING.

By Dr. G. Balfour Marshall.

The following case presents some interest, as in the course of eleven pregnancies twins occurred on five occasions. In the eighth pregnancy one of the twins was aborted at the end of the third month, the other was carried to full time.

In the eleventh pregnancy there was hydramnios; one fœtus had been dead for some time before birth, the other was born alive.

The following are the details of the various pregnancies (Mrs. K., aged 35):—

First pregnancy, February, 1891.—Single, dead six weeks before birth at ninth month.
Second pregnancy, January, 1892.—Twin girls; only one born alive, and died in a few minutes.
Third pregnancy, March, 1893.—Twin boys; one died at 10 months, other still alive.
Fourth pregnancy, May, 1896.—Single, girl, still alive.
Fifth, sixth, and seventh pregnancies.—Abortion.
Eighth pregnancy, October, 1899.—Twins; one fœtus aborted at third month; the other, a girl, carried to full time, and still alive.
Ninth pregnancy, November, 1901.—Twin abortion.
Tenth pregnancy.—Single abortion.
Eleventh pregnancy, June, 1905.—Twin boy and girl; hydramnios; girl dead for three or four weeks probably; boy born alive, and lived five weeks.

Only three children remain alive out of a possible family of sixteen. There seems to be both a paternal and maternal influence, as her father's sister had five children, and twins once; her mother had seven children, twins once.

REVIEWS.

Minor Medicine: A Treatise on the Nature and Treatment of Common Ailments. By WALTER ESSEX WYNTER, M.D., B.S. London: Sidney Appleton. 1907.

THIS is not a new field of medical authorship, as the late Lionel Beale and others have written on the minor diseases and ailments that afflict the body of man. The plea for the appearance of this volume is that the reading of it is designed to take the place, so far as that may be possible, of the apprenticeship training that was wont to be given in surgeons' shops to young men intended for the medical profession. The system of apprenticeship was certainly not an unqualified blessing, for it led, we believe, to swelling the number of unqualified practitioners, viz., men without a diploma, who, with more or less practical ability, eked out an existence in towns and villages independently or "covered," till recent legislation put an end to their unlicensed practice. Grant Dr. Wynter's plea, and that even a reading or theoretical acquaintance with minor ailments, which are not to be seen in infirmaries and dispensaries, is much better than no familiarity at all, our author and his collaborateurs have done their work very creditably. Fourth year students and young practitioners cannot fail to learn many things by consulting the book. There are nine chapters treating in succession the digestive, respiratory, nervous and muscular systems, personal health, diet, and affections of the skin, eye, ear, nose, genito-urinary organs, and infantile troubles. This is a heavy order of subjects to be compressed within 250 pages, but the methodical, crisp style of the volume permits much useful information to be given. In addition to the prescriptions printed in the text, there are 18 further pages of medical formulæ, and a complete index covering other 8 pages. The printing and bright binding are commendable.

Medical Diagnosis: A Manual for Students and Practitioners. By CHARLES LYMAN GREENE, M.D. London: Rebman Limited. 1907.

NOTHING but praise is due to Dr. Greene for the production of this volume on medical diagnosis. Conciseness is often a feature conspicuous by its absence in works which treat of this subject, but the author has succeeded in being concise, practical, and up to date.

The book is not a mere compend, nor can it be said to take the place of more elaborate works on the subject, but practically everything is contained in this volume which is of practical value to the student and practitioner.

The marginal notes and running page headlines constitute a distinct feature of the volume. Indeed, in a work on physical diagnosis these are in a special sense of great use in focussing the attention not only on the understanding of the conditions described, but also on the differential diagnosis. Indeed, if there is one feature of the volume which stands out more prominently than any other it is the lucidity which is thrown on all the subjects treated by the marginal notes.

The physical examination of the chest is treated exhaustively, and we can heartily recommend this part of the volume to the student and practitioner as one that attains almost to perfection. There is nothing omitted here, and nothing added that will confuse.

The part of the volume which treats of the diseases of the nervous system also deserves attention, and clears up many points in this most intricate and interesting division of physical diagnosis. Altogether, Dr. Greene has, in the presentation of his subject, placed not only the student, but the general practitioner as well, under a distinct debt of gratitude.

A Manual of the Practice and Theory of Medicine. By SIR WILLIAM WHITLA, M.A., M.D., LL.D. In Two Volumes. London: Henry Renshaw. 1908.

THE great and deserved popularity which has attended Sir William Whitla's earlier works is one of the best guarantees for the success of this new undertaking. Each volume has an outside resemblance to the *Dictionary of Treatment*, and to the latest edition of *Materia Medica and Therapeutics.* The two volumes have a continuous pagination, but each has a complete index for the whole work. The author has here, as in his earlier works, adopted the plan of arranging the subjects in alphabetical order. This may involve repetition, but notwithstanding this, the writer's aim has been to give an independent, though condensed, account of each of the diseases which are usually recognised as coming within the province of the physician, including its etiology, pathology, symptomatology, diagnosis, and treatment. A good deal may be said in favour of this arrangement, particularly since it has worked so well already in Sir William Whitla's hands. In any case, we welcome this new product of the distinguished author's immense industry.

A Text-Book of the Practice of Medicine. By HOBART AMORY HARE, M.D., B.Sc. Second Edition. Revised and Enlarged. London: Henry Kimpton. 1907.

DR. HARE is now very well known as a writer on medical subjects, and a new edition of one or other of his books seems constantly to be coming before us. That his works find favour with the reading public is shown by *Practical Therapeutics* being in its eleventh edition and *Practical*

Diagnosis in its fifth. And now we have his latest work in its second edition. Such a book as this needs little praise from us, for by its first edition it has already established its position. This later issue is quite up to date, and it seems to take an essentially judicious and reasonable attitude in regard to any of the newer views as to the causation or treatment of disease which may come up for consideration.

The book is well illustrated, and in this respect is much ahead of some of the other text-books of medicine. The illustrations certainly add greatly to the elucidation of the text.

Aids to Medical Diagnosis. By ARTHUR WHITING, M.D., M.R.C.P. London: Baillière, Tindall & Cox. 1907.

THIS small volume of some 150 pages assumes a knowledge of systematic medicine. The scope and basis of the work are clinical and not pathological, and it will be found eminently useful in the diagnosis of medical cases. The text is illustrated by several plates. The chapter on Diseases of the Heart and Blood-vessels is written in a clear, systematic style. The section devoted to Diseases of the Nervous System has been arranged in a concise, methodical manner, and includes a handy table of the distribution of the motor nerves, as well as the segmental sensory skin fields. We have perused the book with much interest, and can strongly recommend it as a work of practical utility in the study of physical diagnosis.

Medical Ethics. By ROBERT SAUNDBY, M.D. London: Charles Griffin & Co. 1907.

THIS is the second edition of a book which first appeared in 1902, and consists of the substance of lectures delivered in the University of Birmingham.

It is a far cry to the book of the same title published by Dr. Percival, of Manchester, in 1803. Comparing the present treatise with that of Percival, it will be found that in the development of professional relationships with the advancement of the times, the range of subjects for discussion has been much widened. Many, of course, are the same, having had their birth in the oath of Hippocrates.

To the advantage of those needing to consult such a book the present treatise is arranged under alphabetical heads for easy reference. In the introduction the author lays down the fundamental principles of medical ethics, so far as these are the outcome of law, practice, and crystallised opinion, relative to the duties of one practitioner to another, of the practitioner to his patients, and of the practitioner to the State. It is only possible to cull here and there from doctrines taught in the book.

Very properly, advertising, either directly or indirectly, in any form is condemned. With reference to popular lectures by medical men, the author thinks that abuses may arise either from the subjects chosen, the manner in which subjects are treated, or from announcements by posters and handbills. Recognising that these may give rise to complaints, he calls for "the exercise of great care on the part of those who consent to deliver such lectures." He thinks that unprofessional advertising may safely be left to be dealt with by the General Medical Council, who by their resolution of 1st December, 1905, have issued a warning on this subject.

The relations which the profession should observe toward bone setters, homœpathic and other -pathic practitioners, are duly noticed. Since there can be little or nothing in common between registered practitioners and other persons who practise a particular cult of medicine, he thinks properly that no advantage to any party concerned is likely to ensue from consultative relationships.

The duty of certification in its various aspects, and all that the duty imports, are fully considered. Since the law recognises for certain purposes the certificates of registered practitioners only, he rightly advises the profession to regard the duty as a serious one, since carelessness in regard to it has on many occasions called forth the censure of judges and magistrates, and, we fear, with propriety. It will be well for practitioners in Scotland to remember that facts which are certified must be testified in the words "on soul and conscience," because it cannot be foreseen that any certificate may not reach a court of law, in which, without the use of the words, a certificate would be held invalid. We have seen a juror fined one hundred merks Scots on whose behalf as excuse for non-attendance a certificate of illness without such attestation had been sent; and we know of parents who have been fined for non-attendance of their child at school for the same reason. Scrupulous care as to the terms of a certificate, in addition to recent verification of the facts certified, are, therefore, essential, if the certificates of practitioners are to maintain their character for trustworthiness in our law courts.

It is most unsatisfactory that the law should still demand from practitioners without fee, and with a penalty in default, death certificates, and as in the Notification of Births Act of the last Parliament, notifications in places in which that Act may be adopted. Moreover, it is to be recollected that certification sometimes involves the question of professional secrecy. It should be understood, however, that no legal breach is committed when the practitioner is fulfilling truthfully a statutory duty, even in the notification of births. But a question of breach may readily arise in many other relationships in the everyday work of a practitioner, as, for example, in the examination and certification as to the health and fitness for employment of employees where the object of examination and of certification are not known by and agreed to by the employee concerned. An employer has a right to know, and it is only proper that the employee should be informed, if for nothing else than as an evidence of the *bona fides* of the practitioner. Further, examination and certification of the condition of suspected or accused persons should never be undertaken, no matter at whose instigation, unless and until consent of the person has been obtained after information has been tendered as to the object of the examination, since there is no power in law for this purpose against the will of the person.

Regarding the signing of lunacy certificates, the author states that "the best course is to avoid signing lunacy certificates as much as possible; it does no harm to let the public feel the inconvenience and the need there is for such amendment of the law as will afford protection, when all has been done in good faith." We demur against this teaching, since it is not difficult to divine circumstances in which the abstinence from this duty might involve more serious issues. It is quite competent and within the option of a practitioner either (1) to absolutely decline the duty, or (2) to ask and receive from those responsible a writing of indemnity against any possible legal consequences of a vexatious kind. The law declares that the chief persons to decide as to lunacy of individuals are the members of the medical profession, hence the statutory certificates provided in the Lunacy Acts. But it also demands that the duty shall be performed with reasonable care and in good faith by the certifier. This is highly proper, since it is a most serious matter to commit a person to an asylum. The source of the author's advice is alleged want of protection to the certifier, but short of absolute protection under all circumstances English law has made provision.

The Act of 1900, s. 330, sub-sections 1 and 2, give reasonable protection. "A person who before the passing of the Act has signed or carried out or done any act with a view to sign or carry out an order purporting to be a reception order or a certificate that a person is of unsound mind . . . shall not be liable to any civil or criminal proceeding, whether on the ground of want of jurisdiction or any other ground, if such person has acted in good faith and with reasonable care;" and "if any proceedings are taken against any person for signing or carrying out or doing any act with a view to sign or carry out such an order, report, or certificate . . . such proceedings may, upon summary application to the High Court or a judge thereof, be stayed upon such terms as to costs and otherwise as the Court or judge may think fit, if the Court or judge is satisfied that there is no reasonable ground for alleging want of good faith or reasonable care."

In view of recent actions in Scotland, it is time that the law of Scotland should be amended by the introduction of similar proceedings at least.

The subject of club and contract practice is discussed by the author. This has become a vexed question of late years. The pronouncements and action of our medical associations have raised serious issues. While it is perfectly true that in the eye of the law all practitioners who are registered are equal, in practice men find themselves in different grades of practice, and subject, therefore, to diversified rates of emoluments. The whole question has revolved around the interpretation of what is adequacy of emolument. Personally, we do not think it conduces to the dignity of the profession to warn members against certain advertised vacancies after the fashion of a modern trades union, since so long as work, however humble, is honourably performed, and since there is no authority to determine the minimum rates to be paid for different classes of work, practitioners themselves must choose for what rates they are willing to work. Of course, this does not mean approval of devious ways of obtaining patients by canvassing or like methods. Unprofessional conduct may also safely be left to the General Medical Council.

Medical etiquette is passed summarily over, although it is a common subject of communication to the medical press. There is not, it ought to be remembered, any property in patients except during the currency of a contract. Medical attendance when called for and accepted is a tacit contract by a patient or his friends for the services of a doctor, but is liable to termination on the part of either when not satisfactory to either. Most doctors in the course of experience realise want of consideration and, sometimes also, of courtesy on the part of patients or their friends, but the only satisfactory solution is a dignified and courteous withdrawal by the doctor, however difficult that occasionally may be. The golden rule ought to be a sufficient guide between practitioners themselves.

While we have selected the foregoing for consideration, it may be said generally of the book that it embraces consideration of almost all problems regarding which practitioners may desire guidance, and we cordially commend it to the profession.

An Atlas of Illustrations of Clinical Medicine, Surgery, and Pathology. Fasciculus XXVII (double number): Diseases of the Fallopian Tube, Ovary, Uterus, &c. London: The New Sydenham Society. 1907.

THIS fasciculus, containing eight plates, is the second for the year 1907, and corresponds to XXV of the *Clinical Atlas.* The first six plates represent ten drawings kindly lent for the purpose by the late Dr. Cullingworth, the accompanying letterpress being taken from that author's *Diseases of Fallopian Tubes*, or from communications appearing in the London Obstetrical Society's *Transactions.* The last two plates, showing syphilis of vulva, mouth, and lips, are from drawings by Mr. Burgess lent by Dr. Herman.

The *Atlas* continues to maintain its former reputation, and special mention may be made of the excellent illustrations of hydrosalpinx, tubal abortion, and carcinoma of the ovary. A better example of procidentia uteri might have been selected to represent what is usually seen in medical practice, as the prolapse depicted on Plate CLXXIX is as large as the patient's thigh, and of a most unusual size.

Diet and Dietetics. By A. GAUTIER. Edited and translated by A. J. RICE-OXLEY, M.A., M.D. London: Archibald Constable & Co. 1906.

THIS treatise, which extends to over 550 pages, including index, deals very exhaustively with the subject of its title. It is a translation of the French second edition.

The plan of the work is to divide the discussion and treatment of the entire field under three parts. Part I treats of the *rôle* of diet, the mechanism of assimilation, types of average alimentation, methods of experimental study of the balance sheet of nutrition, the digestibility and utilisation of foods, the assimilation of different nutritive principles, the values in energy of alimentary rations, alimentary equivalents, the production of vital energy, experimental calorimetry, and kindred subjects; Part II, of classification of aliments, foods derived from the vegetable and animal kingdoms, fruits, food accessories, inorganic foods, drinking waters of different origins and the maladies attributable thereto, the preparation of foods, the distributions and compositions of meals, and the use of stimulants, alcoholic and non-alcoholic; and Part III, of alimentary regimens, with their influences on races, mental work and conditions of work, and their variations due to climate and season, insufficient and excessive regimens, exclusive diets, vegetarian diets, milk diets, meat diets, diets in health, in disease, and in convalescence, and of alimentation in hospitals, asylums, and prisons in France. All of the above subjects are exhaustively considered.

The author starts from the thesis that, "whatever may be its composition, a principle is only alimentary if it can be placed, in traversing the digestive tube or in reaching our organs, in such a form that these can utilise it either as constructive material or as a means of action." Such a broad definition gets rid of many initial difficulties. He is of opinion that man varies his food through instinct, and that no single substance or substances from a single kingdom can furnish all the elements needful for full and healthy nutrition. The pure vegetarian, for example, can live solely on herbs and vegetables, but only by accumulating a mass of material so that he may get enough out of it to sustain him, much of which, however, must be ejected undigested from the body.

He finds from examination of the food supply of Paris that of the average 100 parts of the food used per head, 23 per cent come from the animal and 77 per cent from the vegetable kingdom.

The study of the nutritive balance sheet is approached from three different points of view and of investigation, viz., (1) Empirical methods, (2) method of free alimentation of a few individuals taken as types, and (3) the method founded on the preservation or maintenance of nutritive equilibrium. He believes that much useful information is obtainable by the first method, provided that the alimentation of a great human community living under normal conditions is under consideration, and that the number of persons and the quantity and nature of the food consumed over a long period of time are known. On this principle, he has worked out for the decennium 1889-1899 the nutritive principles contained in the average daily diet of the inhabitants of Paris, and he finds, in terms of grammes, that the albumins are 102·1, fats 56·54, and carbohydrates 400·4, or, excluding the sugar corresponding to the alcohol of fermented liquors consumed per daily average ration, 314 grammes; the relation of proteids to fats and starches thus being 1 to 4·5, or 22 to 100.

Respecting the second method he sounds a note of warning. Any conclusion to be near the truth must be derived from the observations of a large number of persons at the same time and over a long period. If so conducted, the conclusions will work out very close to those of the former method.

The third method has its advantages as well as its drawbacks—the former in that the observer can measure exactly the quantities of foods utilised by the subject of experiment, and the weights of proteid or fatty substances stored or consumed in the tissues; and the latter in respect that an observer can only deal with a small number of subjects at one time, who may, moreover, have individual peculiarities, the enormous amount of accurate work which is entailed. It would appear that little practical difference as to result, whatever method is used, ensues.

The chapter on the digestibility and co-efficient of utilisation of foods and the assimilation of different nutritive principles is full of sound knowledge, and is well worthy the attention of the practitioner. The calorific values of different food principles is exhaustively dealt with, and valuable tables illustrate the teaching. A full description and drawings of Atwater's respiratory calorimeter are given.

Part II discusses the origin, character, composition, varieties, and uses of different alimentary substances. Comprehensive tables give the composition in nutritive principles of foods of vegetable and animal origin, as well as the composition of alcoholic liquids. The forms under which flesh meat is eaten is an interesting chapter. While it is true that the raw flesh of animals is digested three times as quickly as cooked or underdone meat, and that in this form it is largely consumed on the continent of Europe, it is to be remembered that this habit has not been established in this country, whatever may be the reasons.

Speaking of broths and extracts of meat, the author points out very definitely that while these are in reality merely nervine stimulants, and are valuable adjuvants to alimentation in that they stimulate the appetite and strengthen the heart, they contain relatively high proportions of creatinic and puric bodies, which sensibly increase the output of uric acid and like bodies, and are, therefore, unfitted for those who are of gouty or rheumatic tendencies.

One of the not least instructive chapters is that on the methods of preserving foods. Considering the keeping power of meat, fresh and frozen, he points out that a slice of natural fresh beef kept in the open air at 54° to 64° F. remained one hundred and ninety-eight hours without developing any disagreeable odour, while a similar slice of frozen meat became tainted at the end of ninety-two hours; but he protests that this does not justify the statement which is commonly made regarding frozen meat, viz., that it putrefies immediately after being thawed. Respecting poisonous meats, that is, meats from diseased animals, we are surprised to find that no mention is made in this connection of the bacilli enteritidis of Gaertner, and more especially in view of the well-ascertained fact that many epidemic outbreaks have been proved to be due to this cause in this and continental countries.

Three chapters are devoted to the subject of alcohol and the liquors which contain it. Dealing with the very vexed question, Is alcohol an aliment? he says that "alcohol behaves as a true aliment, and even as a valuable aliment, as long as it does not exceed 1 gramme per kilogramme weight of the body in the daily allowance, a dose known to be on this side of the dangerous zone. . . . In moderate doses (as above expressed in terms of absolute alcohol), and in these doses only, it forms an aliment suitable to quickly secure heat and vigor, to warm up the blood as is the common expression, to protect the nitrogenous part of our tissues, and, finally, to place the subject in a state to be capable of suddenly furnishing an effort superior to that which alimentation without alcohol enabled him to make, . . . although dangerous in its handling for the insufficiently-nourished individual."

On the general question of alcoholism, he affirms that "the abuse of spirituous liquors or alcohol in its natural state has become, like opium, one of the scourges of humanity. . . . It threatens and strikes everywhere the strongest races. From year to year the danger continues to increase." He further points out that its consumption has increased very significantly in every European country, and he very properly connects the abuse of alcohol with the increase of crime and insanity. The alcoholic transmits his defects by heredity. The children "become susceptible, nervous, violent, and vicious, and produce a fresh generation of degenerates and madmen;" and if the alcohol used contain essences of anise, absinthe, &c., the effects are even more disastrous.

Potable waters occupy his attention. Generally speaking, the subject matter is according to modern knowledge. But it is somewhat astounding to read in a modern book the following:—"Since the substitution of mountain waters for the too chalky waters of the Clyde, vesical calculi, formerly very frequent in Glasgow, have progressively diminished." We are not aware of the authority for such a statement, since the water of the Clyde has never been hard water.

Most valuable chapters for the practitioner are those which deal with diet in illness, but space forbids detailed consideration.

The book is of the first rank. But it is not possible to fully congratulate the translator on the results of his labours. While, on the whole, the translation is faithfully performed, there are not a few parts in which sentences are ungrammatical, composition is halting, and the spelling bad. Of the first, we need only point to pp. 107, 258, and 421; and of the last, to such misspellings as "dessication" for "desiccation," "arnotto" for "annotto," "translucid" for "translucent," "Penicilium" for "Penicillium," and "cryptograms" for "cryptogams."

Nature's Hygiene and Sanitary Chemistry. Containing also a Special Account of the Chemical and Hygienic Characters of Eucalyptus, Pine and Camphor Forests, and some Industries connected therewith. By C. T. KINGZETT, F.I.C., F.C.S., &c. Fifth Edition. London: Baillière, Tindall & Cox. 1907.

A BOOK which has reached its fifth edition does not call for an extended notice. It contains twenty-five more pages than the fourth edition, and, written with almost the same divisions as the previous issue, may be considered quite up to date. Much information of a chemical and therapeutic nature is herein conveyed, especially regarding the sanitary properties of the peroxide of hydrogen, from which the stage is easy to a laudation of the preserving and healthful virtues of Sanitas Fluid, and the other properties and forms of that pleasant disinfectant.

The volume, however, is much more than an advertisement of Sanitas, and, if read carefully, will give a fair *résumé* of the principles of hygiene and the prevention of putrefaction. It would be well if books produced for an object mainly commercial were always written so intellectually and gracefully as this one is.

The printing and binding are excellent.

Handbook of Gynæcology. Edited by DR. J. VEIT, Halle. Second and completely Revised Edition. Vol. I. Wiesbaden: Verlag von J. F. Bergmann. 1907.

THE second edition of this valuable series of articles by different authors, and edited by such an authority as Dr. Veit, will be welcomed by all who take a scientific interest in the surgical and medical aspects of gynæcology.

The editor, in his preface, informs us that the list of contributors is somewhat changed since the first edition, Drs. Gebhard, Gessner, Löhlein, and Viertel having been removed by death, and Drs. Fritsch, Frommel, Nagel, and Winternitz being unable to again contribute. However, with such names as Bumm, Doderlein, Menge, Pfannenstiel, Winter, &c., being on the list of contributors, the gynæcologist has a rare collection of material in store.

The subject matter of this volume is also changed since the first edition; diseases of the vagina and malformations of the genital tract do not appear, and as new material several papers on uterine myoma are inserted.

In this first volume the various contributions are by experts, and form a valuable exposition of the most recent scientific German opinion on the subject under discussion. K. Franz, Jena, writes on asepsis in gynæcology; uterine displacements are dealt with by O. Küstner, Breslau; the pathology of uterine myoma is by R. Meyer, Berlin; the etiology, symptomatology, and diagnosis of uterine fibroids is from the pen of the editor, J. Veit, Halle; Dr. Schaefer, Berlin, deals with the electrical treatment of uterine fibroids; and Professor Olshausen, Berlin, treats in a most interesting and instructive manner the question of abdominal operations for uterine fibroids, and the question of pregnancy in conjunction with uterine myoma, the complications arising, and the forms of treatment.

The first article is by Franz, of Jena, on "The Prevention of Infection in Gynæcology." The teaching is advanced, interesting, and exceedingly instructive. Disinfection of the skin; the use of rubber and other gloves during operation, and the method of sterilising the same; protection of the patient's skin, and manner of clothing; prevention of air infection; the operating room; sterilisation of instruments and dressings, sutures, drainage, and treatment of wounds form part of the subject matter of this interesting contribution.

There are excellent drawings of the various methods of protecting the field of operation, which are useful. The operating gynæcologist, in contra-distinction to the gynæcological physician, will find this paper replete with information regarding the methods of asepsis now generally adopted.

The contribution of Küstner on the abnormal positions of the uterus (pathological fixation, undue mobility, elevation, retroposition, retro-versio-flexio, prolapsus, &c.) is the most complete paper on this special section we are able to recall. Excellent illustrations, descriptions of operations, and tables giving the results of operative treatment by various methods are food for careful reflection. The description of the operations of Alexander-Adams, and vagino-fixation are well illustrated; there are carefully tabulated results of cases given. The Wertheim, Freund, and Schauta operations for prolapsus uteri are excellently illustrated. A discussion on inversis uteri and hernia uteri completes this monograph. This is a particularly noteworthy contribution.

The pathologist will find R. Meyer's article on the pathology of myoma uteri one of conspicuous merit; a clear and complete exposition of the views of recent pathologists on this subject will be found here. Excellent illustrations descriptive of the histology are given, and well repay careful perusal.

The editor's contribution of the etiology, symptomatology, and diagnosis of uterine fibroids is in keeping with the excellent contributions which precede it. Little which is quite new has been given in this paper. Emphatic testimony, however, to the danger of delay in dealing with uterine fibroids, and that alone by operation, is given. The palliative treatment suggests nothing fresh. A description of the method of vaginal operation completes this section.

R. Schaefer, Berlin, has little to say in favour of the electrical treatment of uterine fibroids. The conclusion one comes to after reading this work is that surgical removal, and not electricity, is the present method of treatment. A full description of the various apparatus, &c., employed is to be found.

The concluding section of this volume is from the master mind of Professor Olshausen, of the Frauen Klinik, Berlin. The question of abdominal operation for uterine fibroid is treated in an exhaustive manner, and is the outcome of a rich experience. The various methods of operation are compared and contrasted as regards results. Supravaginal amputation still holds favour with Professor Olshausen, almost to the exclusion of total hysterectomy. He pays little heed to the fear of cancerous involvement of the remaining cervix after sub-total hysterectomy. Cervical fibroids, cystic degeneration, after-treatment, and complications are amply dealt with.

The closing chapter on pregnancy, complicated by uterine fibroids, with illustrative cases, is worthy of the great reputation of its author.

So excellent is this first volume, in material, illustration, and in the method of its publication, that the few errors in an extensive bibliography, which are of little account and very apparent, do not require more than mention.

This is a notable contribution to the literature of gynæcology.

On Diseases of the Rectum and Anus, including the Fifth Edition of the Jacksonian Prize Essay on Cancer. By HARRISON CRIPPS, F.R.C.S. Third Edition. London: J. & A. Churchill. 1907.

Cancer of the Rectum, its Surgical Treatment, with an Appendix of 380 Cases. Jacksonian Prize Essay, Fifth Edition. London: J. & A. Churchill. 1907.

THERE cannot be said to be a lack of books dealing with the subject of diseases of the rectum and anus. Several such have been reviewed in our pages during the last few years. In this edition of his work Mr. Harrison Cripps has placed in our hands a volume the value of which consists largely in its being a record of personal experience. It is not overburdened with details—in fact, the anatomy of the part receives but scant notice—but against this we must set the advantage of its evident usefulness to the practitioner who wishes information regarding conditions of frequent occurrence.

The author's method of excision of the rectum for cancer is not what one meets with in modern text-books, nor is that of colotomy. Nevertheless, he speaks strongly of the good results which he has obtained from them, and we must listen to the dictum of one of his experience. The same remark applies to his treatment of rectal stricture.

In places the construction of sentences is loose, but on the whole the volume is easily read. We regret to notice a want of dignity showing itself here and there in the volume. Pleasantries are all very well in their proper place, but that place is not in a serious work.

As we have said, the volume contains much interesting information, and it is worthy of being read.

Diseases of Infancy and Childhood. Fourth Edition. By L. Emmett Holt, M.D. London: Sidney Appleton. 1907.

This is undoubtedly one of the best books on the subject in the English language, and it deservedly enjoys a great popularity. It has gone through four editions since 1897, the third edition having appeared only so recently as 1905. The only portion of the volume which has been materially altered from the last edition is that appertaining to the question of nutrition. This is, of course, one of the most important, and also most difficult, branches of pediatrics, and in this work receives much attention. The physiology of nutrition, the various modes of carrying out artificial feeding on scientific principles, and the diseases which result from some disorder of this process are minutely described and lucidly set forth. The arrangement of the various sections is admirable, and the volume is supplied with a most complete index, making it exceedingly convenient as a book of reference.

Guide to Diagnosis in Diseases of the Throat, Nose, and Ear. By Dan M'Kenzie, M.D. Glasg. London: Rebman Limited. 1908.

The aim of the author of this small book has been to give a brief, accurate, and readable account of the methods employed in the diagnosis of diseases affecting the throat, nose, and ear. He has in large measure succeeded in attaining this object, though, in many instances, brevity might, with advantage to the student, for whose use the book has been compiled, have been less evident.

The general arrangement of the subjects is on the lines of the average text-book dealing with the diseases of those special organs, and there is evidence of much care having been bestowed on its preparation.

A perusal of the book convinces one that the author has a sound practical knowledge of his subject, and this is, perhaps, best illustrated in the section dealing with diseases of the ear. The description of the suppurative inflammations of the middle ear are immediately followed by the discussion of mastoid and labyrinthine suppuration, thus following in his description the natural sequence of events where those complications occur.

As a short guide in the examination of the throat, nose, and ear, and as an aid in the diagnosis of the diseases affecting them, this book can be recommended. The methods of examination are carefully described, and the symptoms are clearly stated, and, where possible, in tabular form.

The Commoner Diseases of the Eye. By CASEY A. WOOD, M.D., and THOMAS A. WOODRUFF, M.D. London: Henry Kimpton. 1908.

THIS book contains the essentials of ophthalmic surgery and medicine tolerably well brought up to date, and in the main it is a book that we can recommend, although we do not think that it is superior to many similar manuals already in use. A sure foundation for ophthalmology can only be laid in the three sciences of physics, physiology, and pathology, and the authors of this small volume seem to us to have built their superstructure on these sciences. We are glad to see that there is a special chapter on the relations of neighbouring cavities to diseases of the eye, for that is a source of headache which is very frequently overlooked. Again and again patients have been sent to us to have errors of refraction corrected on account of severe headache when we found that the condition was due to nothing else than a diseased condition of the frontal sinus. This special chapter is written by Dr. Brawley, and is undoubtedly a useful adjunct to the book, all the more so that it calls attention to a condition of affairs which is often overlooked.

The whole work seems to us a very good epitome of present day ophthalmic practice. It is in no sense a critical book, and there is little if anything new in it, but it is quite a good *résumé* of the science as at present understood and practised. The volume is extensively illustrated, there being a large number of drawings and diagrams, some of which are original, while others are taken with due acknowledgment from very many sources. A certain amount of illustration is necessary, but it has always seemed to us that the modern tendency to substitute pictorial representation for clinical work is reprehensible. There is only one way in which a student can learn to recognise disease, and that is by the examination of patients. A good number of the illustrations representative of diseased conditions in this book we entirely fail to recognise. One which is intended to represent acute catarrhal conjunctivitis might well be taken as iris bombé, serous iritis, or even epitheliomatous ulceration of the upper eyelid. It certainly does not convey to our mind the slightest idea of a catarrhal conjunctivitis. One or two of the pictures seem to us entirely wrong. For example, the figure of divergent squint (page 505) represents both eyes as divergent. Then, again, we find a vertical antero-posterior section of the eyeball passing through both the optic nerve entrance and the macula lutea, which, of course, is impossible. We are sorry to see that the authors still advise the slitting up of the canaliculus, and have got the idea of stricture firmly implanted in their minds. Why they should advise us to destroy the punctum and the canaliculus for the purpose of treating a stricture at the junction of the nasal duct and the lachrymal sac we do not know. The fact is that such a procedure is mentioned in almost all the textbooks, and, like their neighbours, the authors of this book have not thought the matter out for themselves. They still talk of antiseptics, although it has been shown over and over again that no drug, in any strength in which it can be applied to the human conjunctiva, is bactericidal.

The Reduction of Cancer. By the Hon. ROLLO RUSSELL.
London: Longmans, Green & Co. 1907.

THE man who finds a cure for cancer would, in the words of Dr. Samuel Johnson, referring to another disease, "deserve a monument as broad as the Thames, as high as Saint Paul's, and as enduring as all time." This little volume has for its theme the reduction of cancer by prevention, and deals not with therapeutics. People eat too much, quality as well as quantity being to blame. In the view, also, of the author, flesh meat is particularly objectionable, thus—"The invariable condition of exemption is plain living, without addiction to toxic drinks, and generally a fare of vegetable products or fruit, with little animal food." On the other hand, every community of opposite habits is badly attacked, some are even decimated. There is no exception. And, with regard to drinks—"Horsley observes that among alcoholics cancer is more frequent than among abstainers." "Tea and coffee, even in small quantities, spoil sleep in many cases, showing their potency."

The book is composed largely of quotations of more or less weight. The passages quoted in this notice illustrate the trend of Mr. Russell's argument.

That there should be less eating and drinking among the people, so say all of us.

The Hygiology of Rome, and Rome as a Health Resort. By JOHN J. EYRE, M.R.C.P., L.R.C.S.I., D.P.H. Camb. Rome: Unione Co-operativa Editrice. 1907.

THIS pamphlet is a reprint from the *Seven Hills Magazine* for March, 1907. In the small compass of 23 pages it deals with such points as situation and soil, climate, water supply, sewerage, food and drinks, hygienic regulations, vital statistics, and Rome as a health resort. Naturally these points are dealt with in a cursory manner, but, as a guide to the general conditions attaching to Rome as a health resort, they will be of some value to members of the medical profession who may desire to inform themselves regarding the advantages and disadvantages of Rome as a holiday or health resort, more particularly with regard to patients who require to winter outside of the United Kingdom. The very undesirable nature of the subsoil upon which Rome is built is admitted by the writer quite frankly. The absence of strong winds in Rome is of great advantage to invalids, particularly when the *tramontana* or north wind blows. The average humidity of the air being only 65 per cent, the climate as a whole may be classed as moderately dry. The water supply is admittedly one of the best in the world, being brought from four different sources, but it is singular to find the author stating that the excessive hardness of one of the supplies is an advantage. The method of dealing with sewage is still far behind modern requirements. The death-rate of Rome (1895-1904) of 19·1, and its rate of infantile mortality, 136, compare unfavourably *cæteris paribus* with those of our large centres of population here. In the two last pages are a number of valuable hints to invalids who propose to winter in Rome, and a note of the conditions most likely to benefit by a stay there.

ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

MEDICINE.

Pancreatitis resulting from Gall-Stone Disease. By William J. Mayo, M.D., Rochester, Minnesota.—In a paper on this subject in the *New York State Journal of Medicine*, April, 1908, W. J. Mayo makes some interesting statements with regard to the etiology of pancreatitis, chiefly the chronic variety, and notes some points relative to the symptoms and course of the condition.

Out of 2,200 operations upon the gall-bladder and biliary passages, W. J. and C. H. Mayo found the pancreas affected in 141 cases (6·1 per cent), and as all pancreatic diseases operated upon numbered 168, this brought out the fact that 81 per cent were due to or accompanied by gall-stones. They found that pancreatic disease occurred more frequently when the common and hepatic ducts were affected than when the gall-bladder alone was involved (18·6 per cent against 4·45 per cent). In 124 cases the head of the pancreas was involved—in 17 the entire organ. He also quotes the fact that in the human subject the terminal third of the common duct is embedded in pancreatic tissue in 62 per cent, while in 38 per cent it lies in a groove between it and the duodenum (Helly). Hence structural change in this part of the pancreas will interfere with liver excretion in the majority of cases, while stone in the duct or infection exposes the duct of Wirsung, and through it the pancreas, to infection, while a stone in the papilla may lead to bile being forced up the duct of Wirsung and so lead to chemical pancreatitis. He thinks that "in this unfortunate association of terminal facilities the large percentage of known diseases of the pancreas have their etiology."

The "triangle of pancreatic infection" is that part of the head of the pancreas which lies between the duodenum on the right, and the ducts of Wirsung below and Santorini above.

With regard to fat necrosis in acute pancreatic disease, he offers the opinion that it is not due to normal pancreatic secretions, but rather to pancreatic juice activated by associated ferments from the bile or duodenal mucous membrane.

In 172 resections of the stomach he has lacerated the surface of the pancreas many times, and in eight cases removed portions, without resultant fat necrosis. Acute pancreatitis may be distinguished from acute obstruction by the ability to secure the passage of flatus.

Under the head of chronic pancreatitis he states that Robson, after removal of common duct stones, has found associated chronic inflammation of the pancreas in 60 per cent of his cases. There are two forms—the interlobular and interacinar; the former being more frequently associated with gall-stone disease, and the pancreas being enlarged, nodular, rough, and to the feel resembling cancer. In the latter, it is smooth and tough, and is frequently associated with glycosuria.

Chronic interstitial pancreatitis may exist over years, and evidence of the disease is an indication for operation. The symptoms and signs are:—

1. Jaundice. This is usually persistent. Emaciation and pigmentation are more extreme than in simple gall-stone cases. If stones are in the common duct, the gall-bladder is contracted in 86 per cent of cases (Courvoisier's law). If distended, it rather suggests cancer.

2. A hard mass lying transversly accross the upper abdomen can sometimes be felt in thin persons.

3. Stools are pasty on account of much undigested food and fat. Even without jaundice the stones are frequent, large, light-coloured, and greasy.

4. Cammidge's reaction is usually present.

Operation consists in clearing out the calculi from the common duct very thoroughly, digital examination being recommended. A large malleable probe should be passed through the duct to the duodenum to dilate it, thus securing drainage. Hepatic duct stones, being usually small, may pass down.

Cholecystostomy or cholecystenterostomy is indicated as means of drainage.

He mentions incidentally that Sydney Phillips has produced evidence to show that catarrhal jaundice, especially the epidemic form, is probably due to pancreatic disturbance, and is similar to such an inflammation of the parotid glands as mumps.—GEO. A. ALLAN.

A Case of Typhoid Meningitis without other Lesions. By R. S. Lavenson (*Univ. of Penn. Med. Bull.*, April, 1908).—The patient was a woman, aged 26, and she had for some weeks previous to the onset of her illness been nursing her brother through a severe attack of typhoid fever. Her symptoms set in suddenly with very severe frontal headache, vomiting, photophobia, and muscular soreness. These had persisted for four days, when she was admitted to hospital. At this time the temperature was 103°, and the pulse 80. There had been suppression of urine for thirty-six hours. On examination there was found to be tenderness over the frontal region, but no paralysis of any of the cranial nerves, and no rigidity of the neck. The knee-jerks were normal, and Kernig's sign was absent. There was no abdominal tenderness, no enlargement of the spleen, and no rash. There was a leucocytosis of 20,640, and this persisted till the day of death, on the seventeenth day of illness.

On the seventh day of illness Kernig's sign appeared, and two days later the tache cerebrale. On the twelfth day there was rigidity of the neck observed, and three days later hæmaturia. The temperature ranged from 99·3° to 103·3°. The Widal reaction was negative on the fifth day of illness, but positive on the eighth day. On the ninth day a pure culture of bacillus typhosus was grown from cerebro-spinal fluid obtained by means of lumbar puncture, but cultures from the blood remained sterile.

At the *post-mortem* examination there was entire absence of any appearance of abdominal disease, the spleen was not enlarged, and there was no intestinal lesion of any sort. On examining the brain, there was found a purulent meningitis confined to the convexity and absent at the base. There was no appearance of tubercles, though carefully sought for. The ventricles contained a moderate amount of slightly turbid fluid. Smears from the purulent exudate showed a large number of Gram-negative bacilli similar in appearance to the typhoid bacillus.

In discussing the mode of infection in this case, the author favours the view that it occurred directly from the nasal cavities, where the micro-organisms may have gained access from the air rather than by the blood. Cultures from the blood were negative, and, otherwise, there was no appearance of a general blood infection. But if this were so, the blood must have acquired its agglutinative properties (as shown by the positive Widal) from the local infection. The patient was said to have had a previous attack of enteric fever some years before, and while this may have given immunity to a general infection, it cannot have done so for a subsequent local infection.

—W. K. HUNTER.

SURGERY.

The Para-rectal Incision in Appendicectomy. By Dr. Moschowitz (*Zentralblatt f. Chirurgie*, March, 1908).—The various methods of opening the abdomen, with a view to removing the appendix, are discussed. Of these, one in particular is described in detail, viz., the para-rectal incision. (In regard to this incision priority is claimed by the Americans for Kammerer, and by the Germans for Lennander.) Lennander, who was one of the first, if not the first, to use this incision, has now given it up in acute cases, as he holds that it does not give opportunities for suitable drainage, and that cases in which it has been employed, and which have required drainage, have shown a large percentage of secondary ventral hernias.

The author of this paper in contesting this refers to his own writings, viz., "Zur Appendicitisfrage," in which he has published details of 2,000 consecutive cases of appendicitis. Of these, 1,906 were operated on, and in 76·1 per cent, that is, in 1,451 cases, the para-rectal incision was made. As an example of the relative proportion of cases requiring no drainage and of those drained, he gives details of cases operated on in 1907. In that year 475 cases were operated on, in 73 per cent the para-rectal incision was made; in these 73 per cent, viz., 345, the number of cases requiring drainage was 212, viz., 61 per cent.

Thus, he has employed this incision in a very large proportion of his acute cases, of which, also, a large proportion have required drainage.

He next discusses the type of drainage, and lays great stress on the amount and duration of drainage. As little of the wound as is possible is left open, and no secondary stitching is employed. No elastic support is worn afterwards.

Coming to the question of the number of ventral hernias which occur, he admits that it is very difficult to trace hospital patients after they leave the wards, but contents himself with the fact that if anything was not completely satisfactory the patient would immediately report himself. ("Unsere patienten uns nur allzugerne aufsuchen" !) He gives no actual numbers, but states that ventral hernia after his operations has been very seldom present. His mortality is very satisfactory, viz., 1·7 per cent.

In conclusion, he appeals for a wider use of this incision—in cases which will require drainage as well as in simple cases.—ROBERT B. CARSLAW.

End-to-Side Anastomosis of the Inferior Vena Cava with the Portal Vein. By Dr. Ludwig Meyer (*Zentralblatt f. Chirurgie*, Feb., 1908).—In a previous number of this paper, in 1902, the successful formation of an anastomosis between the inferior vena cava and the portal vein in a dog was described. Vidal also performed such an operation on man in 1904. In both of these cases the portal vein was stitched into the vena cava, whereas in the present paper the vena cava is stitched into the portal vena, and the blood from it passes through the liver.

This operation of cutting across the vena cava in its continuity, of isolating it from the surrounding tissues, and of implanting it into the portal vein, is something hitherto unattempted. In fact, ligation of the vena cava distal to the entrance into it of the renal veins was only accomplished successfully in cases of marked stenosis of the vena cava in which collateral circulation was already established.

The technique of the operation, as performed successfully by the author on a dog, is as follows:—An oblique incision is made 10 cm. long from 2 cm. below the xiphi-sternum to the anterior superior iliac spine on the right side. The bowels and pancreas are delivered outside the abdomen, and are kept warm by hot saline solution. The portal vein is then isolated, and clamped lightly by two rubber-covered forceps 1½ cm. apart. The inferior vena cava is next found, freed from the surrounding tissues, and ligatured distally, while peripherally it is held in rubber-forceps and divided beween these two points. This free end of the vena cava is then stitched into a longitudinal incision in the portal vein (between the forceps) by means of a specially prepared material. Great care must be taken lest leakage of blood take place, and also lest there be any traction on the anastomosis causing either leakage or a kinking of the veins. The dog on which this operation was performed lived for fifteen days, and in that time neither sugar nor albumen was found in the urine. There was no evidence of backward pressure in the veins, no congestion, no œdema, thus proving that the anastomosis was successful in its action.

This operation was performed at the request, and under the constant supervision, of a colleague engaged in research on disordered metabolism.

—Robert B. Carslaw.

The Abdominal Position in Operations on the Chest. By Dr. Elsberg (*Zentralblatt f. Chirurgie*, March, 1908).—Acute pneumothorax is recognised by all as a very dangerous complication, which may occur in operations on the thoracic cavity and its contents. Both Sauerbruch and Brauer have made remarkable advances in preventing its occurrence, but, unfortunately, the apparatus required in either of their methods is very complicated and expensive.

Attempts have been made to reduce the danger of pneumothorax by artificially producing adhesions between the visceral and parietal layers of the pleura by means of tamponades, silver nitrate, turpentine, zinc chloride, iodine, sutures, &c. All these are uncertain and unsatisfactory in their action. Most surgeons content themselves with opening the pleural cavity slowly and carefully, and with at once pulling out a portion of the exposed lung into the wound, thus closing the opening in the thoracic wall. The lung is then lightly stitched in position.

The author has pursued his studies on this question by experimenting on dogs. He found that when a small opening (1 to 5 mm.) was made in the right or left pleura, and the dog was kept on its back, or on its right or left side, that respiration and cardiac action usually remained very good (although the amount of inspired and expired air was reduced by fully one-third). Often, however, the dogs died, either from cardiac failure or from acute pneumothorax (the symptoms being dyspnœa, &c.), either single or double. The greater the opening in the pleura the greater was the danger of pneumothorax.

On the other hand, if the dog was placed in the abdominal position, a large opening (2 to 4 cm.) could be made in the pleura without the onset of pneumothorax; if the opening was slowly enlarged, it was often possible to remove almost half the thoracic wall without severe symptoms ensuing. It was sometimes possible to make a small opening (1 to 2 mm.) in both pleural cavities when the dog lay on its back, but in the majority of these cases death took place. On the other hand, when the abdominal position was used, double incisions of 1 cm. could be made without causing death, although the volume of inspired and expired air was very small. Also, the severe symptoms of acute pneumothorax seen when the back position was employed could often be caused to disappear by turning the dog on to its abdomen.

The author has made use of these results in his intra-thoracic surgery, and has had excellent results from the employment of the abdominal position in operating for empyema, bronchiectatic cavities, and in transpleural incision of hepatic and subphrenic abscesses. He states that if this position is employed there is little, if any, of the irregular breathing or coughing which usually takes place when the pleural cavity is opened and the pus liberated. In hepatic and subphrenic cases, although a large external opening is made, there is very little respiratory and circulatory disturbance if the patient is lying in the abdominal position.

As a result, then, of his experiments on dogs, and of his intra-thoracic operations on man, Elsberg strongly recommends the abdominal position for these cases. His views have more recently been confirmed, and his treatment recommended by the French surgeon Depage.—ROBERT B. CARSLAW.

A Modification of the Operation of Œsophago-jejuno-gastrostomy (Roux). By Herzen (*Zentralblatt f. Chirurgie*, February, 1908).—The greatest desire of a patient suffering from stenosis of the œsophagus is to be able, if it is at all possible, to take nourishment by mouth, partly because it seems to him much more natural than pouring fluid into a gastrostomy tube, and partly because gastric digestion is greatly aided (in a reflex way) by mastication and deglutition.

Roux endeavoured to make this possible by the operation of œsophago-jejuno-gastrostomy—that is, by forming a new œsophagus out of a loop of the jejunum. His procedure was as follows:—A section of the jejunum was *partially* freed from its mesentery in such a way that there was a long upper free segment and a short lower segment, while the nutrition of the whole was supplied by a single jejunal artery and its accompanying vein, which ran along the remaining untouched portion of the mesentery. This section of jejunum, thus prepared, was cut above and below, and the cut ends of the bowel were united by means of a Murphy's button, thus restoring the continuity of the bowel. The loop of jejunum, having been in this way freed, was then drawn upwards in front of the omentum and transverse colon, and the upper long arm was drawn upwards under the skin (which had previously been "tunnelled") to the neck, where the upper open end was stitched to a small opening in the skin. The short lower arm was then implanted into the stomach near the smaller curvature.

The above procedure constituted the first stage of the operation. The second stage consisted in implanting the upper end of the long upper arm into the œsophagus, and closing the œsophagus completely below the point of this anastomosis. This complete operation Roux performed successfully on a child with a well-marked œsophageal stenosis.

The author performed the above operation on a case of carcinoma of the œsophagus, but the patient died on the fourth day. At the autopsy he found that there was no gangrene in the freed section of jejunum; on the other hand, there were well-marked adhesions between it and the surrounding tissues. But the mucous membrane was markedly swollen, and there were numerous small hæmorrhages in the mesentery supplying it, and also some blood in the peritoneal cavity near it.

The *post-mortem* examination forced him to the conclusion that there was insufficient exit for the blood from the bowel, either owing to too few blood-vessels or to compression of the single jejunal vein (probably due to a partial twisting of the mesentery on its own axis).

Roux' operation has thus several disadvantages:—

1. The length and difficulty of the operation.
2. The great extent of bowel from which the mesentery must be freed.
3. The consequent insufficient circulation in the freed bowel.
4. The possibility of torsion of the mesentery about its own axis.
5. The possible pressure on the transverse colon.

Herzen then proceeds to describe the modification he has made in the operation with a view to removing these disadvantages and dangers.

In the first place, it is possible to perform the operation in three stages. The first stage is divided into two—the bowel is freed and the upper end taken up under the skin to the neck, and then at a second operation the lower end is implanted into the stomach. The third stage is the same as that in Roux' operation, viz.. the implantation of the upper end of the bowel into the œsophagus. This is a distinct gain, as the first part of Roux' operation was long, and most exhausting to the patient.

In the second place, the long upper arm of the freed jejunum can be taken, not in front of the omentum and transverse colon, but behind them, by piercing the transverse mesocolon and gastro-colic omentum. This enables one to obtain sufficient free jejunum without sacrificing so much mesentery, and it also brings the jejunal segment directly into contact with the stomach. By these means we are now spared the necessity of dividing the jejunum in a second place so as to form a lower small arm.

The circulation in the upper freed segment is much better, because we have now many jejunal arteries and veins supplying it, and we have also the advantage of the adjacent collateral circulation. To prevent any possible torsion of the mesentery this is stitched to the openings in the mesocolon and gastro-colic omentum. Thus, the five disadvantages in Roux' operation can be largely overcome. This, the first, part of the operation is completed by re-establishing the continuity of the alimentary canal by implanting the cut end of the jejunum into the bowel lower down. This operation may be called jejunostomy retrocolica antithoracica cervicalis Y-formis.

At the second sitting—after the patient has recovered from the shock of the first operation—the jejunum is freed from any adhesions that may have formed in the epigastrium, and is then cut through, great care being taken not to injure the mesentery. This section is made about 10 cm. from the edge of the ribs. The opening in the lower section of the bowel is then closed, while the upper section is implanted into the stomach close to the smaller curvature. The great advantage of this technique is that the length of the bowel which is devoid of mesentery is much shortened, and the rest of the jejunum is much better supplied by blood owing to the preservation of more jejunal vessels.

The last stage of the operation consists, as in Roux' operation, of implanting the upper end of the new œsophagus into the original œsophagus.

Various cases are then described in which the above operation was performed. In one case the patient, suffering from carcinoma of the œsophagus, felt so much relieved after the operation of jejunostomy retrocolica antithoracica had been performed that he returned home without having either the second or third stages performed. He fed himself partly by mouth and partly through the fistula.

A second patient underwent the complete operation. He was a young man of 20 years of age, who had a very complete stenosis of the œsophagus, due to cicatricial contraction following on swallowing sulphuric acid. The first stage was performed on 10th September, 1907; 28 cm. of jejunum were freed from mesentery, necessitating the ligation of three jejunal arteries.

On 4th October the second stage was performed; about 20 cm. of jejunum was resected between the site of the implantation of the jejunum into the stomach and of the jejunum into jejunum lower down. After this second operation the patient was fed by fluid nourishment through the fistula.

The third and last phase was performed on 17th November. The new œsophagus was freed for about 12 to 15 cm., and it was then united to the original œsophagus, which had also been freed after section. Twenty-one days after operation patient was able to swallow fluids without difficulty, and one week later he could eat bread, pounded meat, eggs, &c.

This patient was shown at the Seventh Russian Surgical Congress in St. Petersburg.—Robert B. Carslaw.

DISEASES OF CHILDREN.

Some Experiences and Observations on Congenital Syphilis in Infants. By Dr. George Carpenter (*The British Journal of Children's Diseases*, February, March, April, 1908).—In continuation of the subject of syphilitic involvement of the lung in infants, Dr. Carpenter describes at some length in the April issue of his paper the characters and effects of gummatous lesions. The small yellow gummata found occasionally *post-mortem* in the lungs of infants resemble gummata of other parts microscopically. Centrally fibrous and peripherally highly cellular, they grow at the expense of the pulmonary alveoli, which may be extensively destroyed. The bronchi are either full of catarrhal products, or have shed their linings, and their walls are infiltrated with small lymphocytes. Carpenter has observed several examples of extensive consolidation of the lungs in syphilitic infants, which have persisted for long periods. The youngest was 6 months old, and consolidation lasted, at least, eight months. The exact relation of such cases to syphilis is not clear, but syphilis must at least be thought of in cases showing such delay in resolution of pneumonic consolidation. The further removed the case is from the syphilitic age, however, the greater are the chances of the consolidation being tuberculous. Some cases of cirrhosis of the lung in young children may well be syphilitic, and modern methods of examination may prove them to be so. "The spirochæte has been detected in the sputum of those suffering from syphilitic pneumonia." The importance of this fact as an aid to diagnosis of this condition of the lung is beyond question. The lung of the child, Isabel H., aged 5 years, who died of exploratory puncture of the chest (reported in *The American Journal of the Medical Sciences*, October, 1893) was indurated, shrunken, and scarred, with dilated and thickened bronchi, which could not be differentiated microscopically from syphilitic pneumonia, though there was no history of syphilis. It was, however, certainly not tuberculous.

Syphilis of the testicles.—The work of Henoch, Bryant, Parrot, Fournier, and others, on this subject, is well known. Carpenter's conclusions (*Practitioner*, 1892) are:—Syphilitic inflammation may take the form of the gummatous or the cirrhotic; he has seen both varieties. All parts of the organ may be attacked, and even the cord and vas may feel thickened. Hydrocele is a not uncommon association. The infantile testicle in health varies in size between a lemon-pip and a hazel-nut, and the normal tension of the globe is, in the language of ophthalmology, about + 2. The left testicle is usually the larger. When enlarged, it is easy to recognise that something is amiss, but in the absence of enlargement—and enlargement is not a necessary accompaniment of disease—the chance of reaching a wrong conclusion is by no means small, because fluctuation is not readily detected in so small and elusive a body as the infantile testicle. If the organ be cirrhosed, however, and if there be no associated hydrocele, the normal tension is changed to a hardness comparable to that of scirrhus. On the other hand, enlargement of the organ to size of a filbert, a chestnut, a plum, or even an egg, would be explicable by supposing the cause to be either syphilis, tubercle, or neoplasm. The seminal vesicles and prostate have not yet been found enlarged in syphilis; this is the only present clinical distinction between the syphilitic and tuberculous testicle. Calmette's reaction (tuberculin ophthalmic) may prove useful. A diseased testicle in the syphilitic age of life is more likely to be syphilitic than tuberculous. Stoeber has, however, demonstrated the presence of tuberculous disease of the testicle in a typically syphilitic infant.

Double syphilitic orchitis may be the active cause of certain cases of infantilism and sundry varieties of mal-development of the organ.

Syphilis of the ovaries and internal genitalia.—Carpenter has no records of ovarian sclerosis, but the spirochæte has been demonstrated in the infantile ovary, and the ovaries have been found diseased in the syphilitic fœtus. Syphilitic atrophy of the ovaries and infantilism in females are, however, probably connected. A case of supposed ovarian tumour in an infant, 22 months old, described by Carpenter in 1903 (*Reports of the Society for the Study of Disease in Children*), was possibly syphilitic in origin and gummatous in nature. It was certainly not tuberculous, and was not an ordinary neoplasm.

Syphilis of the nervous system in infants.—Carpenter has met with few examples. Syphilitic meningitis, spots of yellow softening of the brain, endarteritis, and gummata on the cranial nerves, perhaps associated with choroiditis, are met with occasionally. There is comparatively little literature on the subject. Barlow, Chiari, Henoch, Sutherland, and Walker have recorded cases of such a type. Carpenter has seen several cases of hydrocephalus in syphilitic infants. One recovered under mercurial treatment: the others were lost sight of. Two cases cited by Fruhinsholz are referred to at some length as illustrating the *post-mortem* conditions found in cases of syphilitic hydrocephalus. The conditions found in the first, an infant, aged 4 months, included the following:—Fluid effusion between yellowish-white, friable arachnoid and the pia; small, yellowish, well-defined tracks of induration throughout the pia; microscopically these showed abundant round-cell infiltrate, especially externally and near the vessels. The second infant, aged 6 months, presented symptoms, during life, of a basic meningitis. *Post-mortem* evidence of an internal meningitis was found. There were small, definite, scattered, whitish meningeal infiltrations, also partial sclerosis of the choroid plexuses—fibrosis of the vessel walls and occlusion of their channels. The ventricular surfaces of the optic thalmus and corpus striatum were covered with thickened membrane, richly vascular and highly cellular. Around the superficial vessels were several layers of round cells. Localised cloudiness, meningeal thickening, and gummata the size of miliary tubercles on the cerebral vessels have also been described by Fruhinsholz. These were accidentally found, and would have been missed in a more casual examination. Fruhinsholz found, also, in a 15 day infant, a depressed area in the frontal lobe of the brain, with thickened, adherent, yellow-white meninges covering cerebral softening, equal in size to an olive.

Carpenter has had under his care a syphilitic girl, aged 5½ months, with extensive encephalitis. The case is fully reported in an appendix to the paper. Both hemispheres were involved in an extensive cortical sclerosis. On the right side the parts involved were the ascending parietal and parietal lobule, that part of the ascending frontal in proximity to the fissure of Rolando, the superior frontal and part of the middle frontal, part of the superior temporo-sphenoidal at the commencement of the fissure of Sylvius, the front half of the middle temporo-sphenoidal gyrus running into the tip of the temporo-sphenoidal lobe, and, internally, part of the callosal, part of marginal, and part of the quadrilateral, reaching from corpus callosum below to vertex above. The involvement of the left hemisphere was practically as extensive, and not very different in distribution.—ARCH. YOUNG.

DISEASES OF THE EYE.

By FREELAND FERGUS, M.D.

Optic Neuritis in Cerebral Tumours. By Leslie Paton.—This paper appears in the *Transactions of the Ophthalmological Society of the United Kingdom*, and is an important contribution to the subject. What makes the paper all the more valuable is that the data were largely collected by so accurate an observer as Mr. Marcus Gunn. The communication deals with 202 cases. The following facts seem to us of great importance. When the tumour was temporo-sphenoidal, optic neuritis was invariably present and that in an acute form. It was also observed in all cases of cerebellar tumour, but was not present in 15 per cent of extra-cerebellar growths. When the neoplasm was frontal or parietal, optic nerve inflammation was not observed in 12 and 14 per cent of the cases respectively. In subcortical tumours optic neuritis was absent in 38 per cent of the patients observed. It was present in 75 per cent of tumours occurring in the thalamus and mid-brain. When the growth affected the pons, optic neuritis was not seen in about 50 per cent of the patients examined. Thus it appears that tumours in the deeper portions of the cerebral hemispheres and in the pons are likely enough to occur without any optic neuritis.

A question of the greatest importance is as to whether a difference in the amount of swelling in the two eyes is of value as indicating the side of the tumour. Mr. Paton answers this question practically in the negative; we give his conclusions in his own words:—"Unless, then, the investigation of a much larger number of cases produces a very marked alteration in the relative proportions of these stastitics, we must conclude that neither the commencement of neuritis nor the height of swelling can be relied upon to indicate the side of the tumour." As a statistical contribution to this important subject, Mr. Paton's paper is of value.

A New Scotometer, invented by Mr. Bardsley, is described in the same magazine. It is practically a small Bjerrum's screen, and cannot but be very useful in investigating scotomata.

The Venous Connections of Schlemm's Canal. By Thomson Henderson, M.D.—This paper is of great interest, for, if the conclusions of the author are correct, and they appear to be founded on careful and extensive investigations, we must entirely alter our ideas of the blood-supply of the ciliary body and iris. He says that the aqueous escapes (*a*) through Schlemm's canal, (*b*) into the supra-choroidal space, (*c*) by absorption by the iris surface. The latter depends on the presence of Fuch's crypts.

Dr. Thomson tells us that he has made between two and three thousand consecutive radial sections, and from this vast amount of research he draws the following conclusions:—

1. The total number of vessels perforating at the pericorneal area is not far short of fifty.
2. These vessels freely anastomose with each other, and, as a consequence, this region is simply honeycombed with vessels.
3. Each vessel sends an afferent or receives an efferent vessel from Schlemm's canal.

Following this, he makes the important statement—"Each and everyone of these perforating scleral vessels are veins, and that likewise, as these vessels are directly connected with the so-called circulus arteriosus iridis major, this last is not a circulus arteriosus, but a circular venosus, and therefore the main venous return from the iris, as well as from a great portion of the ciliary body, is by way of anterior perforating scleral vessels." Schlemm's canal, too, he regards as nothing more than a venous sinus.

The bearing of all this on the etiology of glaucoma is, of course, apparent. He regards sclerosis of the cribriform ligament as the etiological factor. This reduces the available aqueous outflow, throws a proportionately greater amount of work on the iris crypts. If these are not equal to this increase of work, the tension rises. He regards the closure of the filtration angle as secondary and not primary.

MESSRS. CHURCHILL request us to state that hereafter the *Transactions of the Ophthalmological Society* will appear in three parts annually. The fasciculi can be purchased by any member of the profession at 4s. each part.

Books, Pamphlets, &c., Received.

Contributions to the Study of the Early Development and Imbedding of the Human Ovum. I.—An Early Ovum Imbedded in the Decidua, by Thomas H. Bryce, M.A., M.D., and John H. Teacher, M.A., M.D. II.—An Early Ovarian Pregnancy, by Thos. H. Bryce, John H. Teacher, and John M. Munro Kerr, M.B. With 10 plates and 12 figures in the text. Glasgow: James MacLehose & Sons. 1908. (12s. 6d. net.)

An Introduction to Dermatology, by Norman Walker, M.D., F.R.C.P. Fourth edition. With 28 coloured plates, and 69 illustrations. Edinburgh: William Green & Sons. 1908. (9s. 6d. net.)

Diseases of the Breast, with special reference to Cancer, by William L. Rodman, M.D., LL.D. With 69 plates, of which 12 are printed in colors, and 42 other illustrations. London: Sidney Appleton. 1908. (16s. net.)

Public Health Laboratory Work, by Henry R. Kenwood, M.B., D.P.H., F.C.S., and W. G. Savage, M.D., B.Sc., D.P.H. Fourth edition. With illustrations. London: H. K. Lewis. 1908. (10s. net.)

Manual of Medical Jurisprudence, Toxicology, and Public Health, by W. G. Aitchison Robertson, M.D., D.Sc., F.R.C.P.E., F.R.S.E. With 39 illustrations. London: Simpkin, Marshall & Co. 1908.

Physical Signs of Diseases of the Thorax and Abdomen, by James E. H. Sawyer, M.A., M.D.Oxon., M.R.C.P.Lond. London: Baillière, Tindall & Cox. 1908. (5s. net.)

Golden Rules of Venereal Disease, by C. F. Marshall, M.D., F.R.C.S. (Golden Rules Series, No. 17.) Bristol: John Wright & Co. 1908. (1s.)

Hygiene and Public, by B. Arthur Whitelegge, C.B., M.D., B.Sc.Lond., F.R.C.P., D.P.H., and George Newman, M.D., D.P.H., F.R.S.E. Illustrated. New and revised edition. London: Cassell & Company, Ltd. 1908. (7s. 6d.)

Prophylaxie, Internationale et Nationale, par Dr. Paul Faivre. Avec 18 figures dans le texte. Paris: J. B. Baillière et Fils. 1908.

The Theory of Ions, a Consideration of its Place in Biology and Therapeutics, by William Tibbles, M.D.(Hon. Causâ)Chicago, LL.D., L.R.C.P.E., M.R.C.S. London: Rebman Limited. 1908. (2s. 6d. net.)

Electric Ions and their Use in Medicine, by Professor Stephane Leduc; Translated by B. W. Mackenna, M.A., M.B., Ch.B.Edin.; with an Appendix by the Translator. Only authorised translation from the French edition. London: Rebman Limited. 1908. (2s. 6d. net.)

The Heart and Sudden Death, by Theodore Fisher, M.D., F.R.C.P. London: The Scientific Press, Ltd. 1908. (2s. net)

The Law in General Practice, Some Chapters in Every-day Forensic Medicine, by Stanley B. Atkinson, M.A., M.B., B.Sc. London: Henry Frowde and Hodder & Stoughton. 1908. (7s. 6d. net.)

Clinical Methods, a Guide to the Practical Study of Medicine, by Robert Hutchison, M.D., F.R.C.P., and Harry Rainy, M.D., F.R.C.P.Edin., F.R.S.E. With 11 coloured plates and 148 figures in the text. Fourth edition, thoroughly revised. London: Cassell & Company, Ltd. 1908. (10s. 6d.)

The Practical Medicine Series, under the general editorial charge of Gustavus P. Head, M.D. Vol. I: General Medicine, edited by Frank Billings, M.S., M.D., and J. H. Salisbury, A.M., M.D. (6s.) Vol. I: General Surgery, edited by John B. Murphy, A.M., M.D., LL.D. (8s.) Vol. III: The Eye, Ear, Nose, and Throat, edited by Casey A. Wood, C.M., M.D., D.C.L., Albert H. Andrews, M.D., and Gustavus P. Head, M.D. (6s.) Chicago: The Year Book Publishers. Glasgow: G. Gillies & Co. 1908.

Handbook of Medicine and Therapeutics, by Alex. Wheeler, L.R.C.P.S.E., and William R. Jack, B.Sc., M.D., F.F.P.S.G. Third edition. Edinburgh: E. & S. Livingstone. 1908. (8s. net.)

Vitality, Fasting, and Nutrition, a Physiological Study of the Curative Power of Fasting, together with a new Theory of the relation of Food to Human Vitality, by Hereward Carrington; with an Introduction by A. Rabagliati, M.A., M.D., F.R.C.S. London: Rebman Limited. 1908. (21s. net.)

The Diseases of Workmen, by T. Luson, M.D., and R. Hyde, M.R.C.S., with an Introduction by His Honour Judge Ruegg, K.C. London: Butterworth & Co. 1908. (4s. net.)

Saint Thomas's Hospital Reports (New Series), edited by Dr. H. G. Turney, and Mr. W. H. Battle. Vol. XXXV. London: J. & A. Churchill. 1908. (8s. 6d. net.)

Extraction of Teeth, by F. Coleman, L.R.C.P., M.R.C.S., L.D.S. With 56 illustrations. London: H. K. Lewis. 1908. (3s. net.)

Catalogue of Lewis's Medical and Scientific Circulating Library, including a Classified Index of Subjects. New edition (revised to the end of 1907). London: H. K. Lewis. 1908. (2s. 6d. net to subscribers.)

Green's Encyclopedia and Dictionary of Medicine and Surgery. Vol. VIII: Physiology (Nutrition)—Rhinolalia. Edinburgh: William Green & Sons. (15s. net.)

State Board Questions and Answers, by R. Max Goepp, M.D. Philadelphia and London: W. B. Saunders Company. 1908. (18s. net.)

Bier's Hyperemic Treatment in Surgery, Medicine, and the Specialties: A Manual of its Practical Application, by Willy Meyer, M.D., and Professor Dr. Victor Schmieden. Illustrated. Philadelphia and London: W. B. Saunders Company. 1908. (13s. net.)

Adenomyoma of the Uterus, by Thomas Stephen Cullen. Illustrated by Hermann Becker and August Horn. Philadelphia and London: W. B. Saunders Company. 1908. (21s. net.)

The Maternity Nurse's Charts and Case Book, by Gertrude C. Marks. London: Baillière, Tindall & Cox. 1908. (1s. net.)

The Edinburgh Stereoscopic Atlas of Obstetrics, edited by G. F. Barbour Simpson, M.D., F.R.C.P.E., F.R.C.S.E., and Edward Burnet, B.A., M.B., Ch.B. With a Preface by Professor Sir J. Halliday Croom, M.D., F.R.C.P.E., F.R.C.S.E., F.R.S.E. In four sections, each containing 25 subjects, with descriptive text. Section II. London: The Caxton Publishing Co. 1908. (Price for the four sections, 84s. net.)

The Correction of Featural Imperfections, by Charles C. Miller, M.D. Second edition, enlarged. Chicago, 1908. ($1·50.)

Clinical Lectures on Neurasthenia, by Thomas Dixon Savill, M.D.Lond. Fourth edition. London: Henry J. Glaisher. 1908. (7s. 6d. net.)

Guide to the Clinical Examination and Treatment of Sick Children. Second edition, greatly enlarged and re-written, by John Thomson, M.D. With 160 illustrations. Edinburgh: William Green & Sons. 1908. (12s. 6d. net.)

Applied Anatomy, Surgical, Medical, and Operative, by John M'Lachlan, M.D., F.R.C.S.Eng.; revised and largely re-written by A. A. Scot Skirving, C.M.G., F.R.C.S.Ed. Fourth edition. Vols. I, II. Edinburgh: E. & S. Livingstone. 1908. (18s. net.)

Catalogue of Electro-Medical Apparatus and Allied Apparatus of every Description, Manufactured by The Sanitas Electrical Co., Ltd. 1908. (1s.)

International Clinics, a Quarterly of Illustrated Clinical Lectures and Specially Prepared Original Articles. Edited by W. T. Longcope, M.D. Vol. II (Eighteenth Series). Philadelphia and London: J. B. Lippincott Company. 1908.

The Pathology of the Eye (Awarded the Nettleship Gold Medal of the Ophthalmological Society of the United Kingdom), by J. Herbert Parsons, B.S., D.Sc.Lond., F.R.C.S.Eng. Vol. IV, General Pathology—Part II. London: Henry Frowde and Hodder & Stoughton. 1908. (15s. net.)

GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR THE FOUR WEEKS ENDING 18TH JULY, 1908.

	Week ending			
	June 27.	July 4.	July 11.	July 18.
Mean temperature,	61·4°	65·1°	57·0°	57·6°
Mean range of temperature between day and night,	38·4°	33·0°	19·9°	22·3°
Number of days on which rain fell,	0	0	4	3
Amount of rainfall, ins.	0·00	0·00	1·28	0·95
Deaths registered,	219	209	228	221
Death-rates,	13·3	12·7	13·8	13·4
Zymotic death-rates,	0·6	0·8	0·8	0·8
Pulmonary death-rates,	3·5	3·0	3·2	3·5
Deaths—				
Under 1 year,	34	40	59	48
60 years and upwards,	46	51	44	53
Deaths from—				
Small-pox,	...	...	...	...
Measles,	4	2	1	1
Scarlet fever,	1	1	1	...
Diphtheria,	...	2	2	...
Whooping-cough,	3	6	10	12
{ Fever,	1	1	...	1
{ Cerebro-spinal fever,	2	4	4	4
Diarrhœa,	6	6	18	13
Croup and laryngitis,	...	...	1	...
Bronchitis, pneumonia, and pleurisy,	30	33	28	33
Cases reported—				
Small-pox,	...	...	...	...
Cerebro-spinal meningitis,	9	9	4	1
Diphtheria and membranous croup,	23	11	11	2
Erysipelas,	15	10	22	5
Scarlet fever,	50	29	29	7
Typhus fever,	...	...	...	...
Enteric fever,	4	11	11	5
Continued fever,	...	1	1	1
Puerperal fever,	1	1	...	5
Measles.*	110	55	61	32

* Measles not notifiable.

Sanitary Chambers,
Glasgow, *28th July, 1908.*

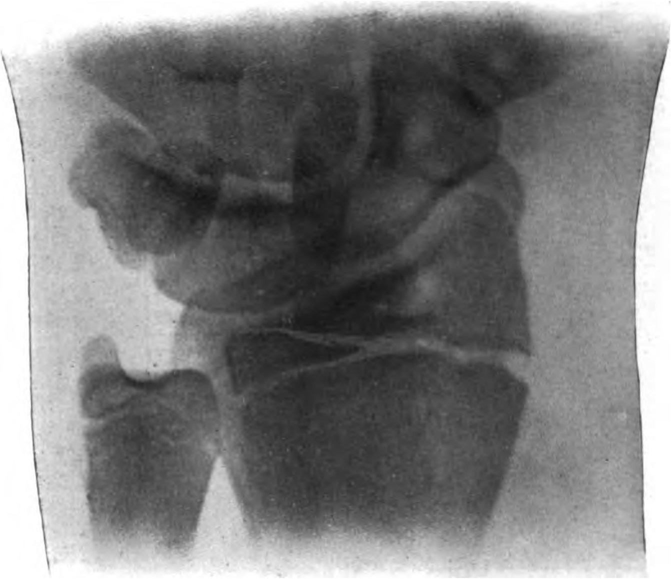

Fig. 1.

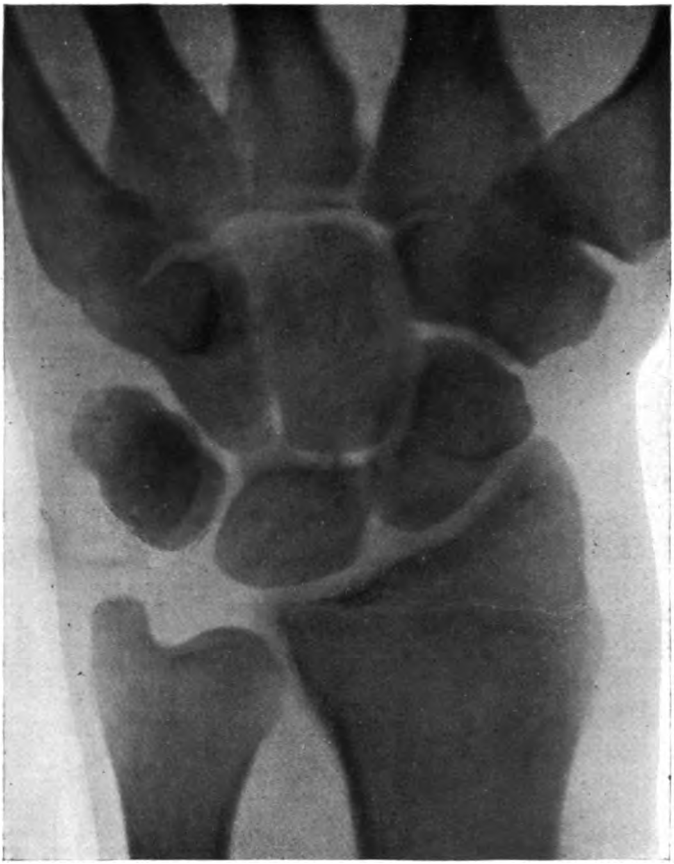

Fig. 2.

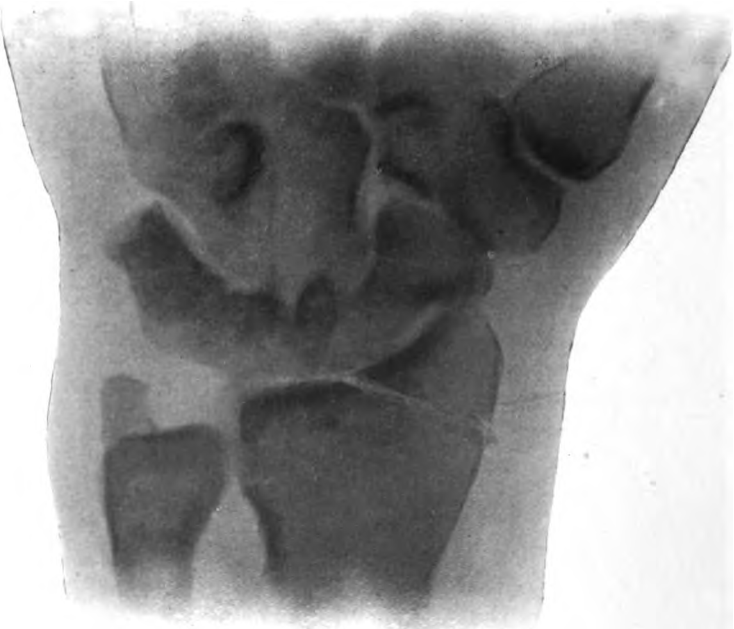

Fig. 3.

THE

GLASGOW MEDICAL JOURNAL.

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ORIGINAL ARTICLES.

CHAUFFEUR'S FRACTURE.[1]

By Sir GEORGE THOS. BEATSON, K.C.B., B.A.Cantab., M.D.Edin.,
Surgeon, Western Infirmary, Glasgow.

The fracture on which I propose to make a few remarks this evening is one that occurs at the wrist-joint, and happens at the starting of a petrol motor car. As this starting is the work of the driver, or chauffeur, I have designated it chauffeur's fracture, following the lead of M. Lucas-Championnière, who has drawn attention to it, and has recorded some cases of it in the *Bulletin de l'Academie de Médecine* for 15th March, 1904, under the heading of "A Professional Fracture in Chauffeurs." A few other references to this particular fracture have been made, as by Mr. F. B. Lund, in the *Boston Medical and Surgical Journal* for 3rd November, 1905, where he gives notes of three cases that came under his observation. I have had two such cases under my care, and my remarks are based on what I observed in these two instances.

As the accident that causes this chauffeur's fracture can only occur in connection with petrol motors, I must briefly allude to the mechanism of these cars. The petrol motor car is propelled by an internal combustion engine, the fuel used in it being petrol, which is a refined spirit of a very volatile and rapidly evaporating character obtained from petroleum. We know that when ordinary household gas escapes into a room, its carbon and hydrogen, mingling rapidly with the air in that room, "carburate" it, as it is called, the result being that the oxygen of the air forms with this diffused hydrocarbon gas an explosive mixture of a powerful kind, as is vividly brought home to the anxious householder or the enquiring policeman, who not uncommonly seek for the leak with a lighted candle. Air can, in the same way, be carburretted by petrol vapour, so as to form an explosive mixture of a very energetic nature, and it is the force generated by the explosion of air so carburretted with petrol that acts on the engine of the motor and propels it along. From this it follows that the machinery of a petrol motor must include, as it always does, the following essential parts:—

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[1] Read at a meeting of the Glasgow Medico-Chirurgical Society held on 5th October, 1906.

1. A carburretter, in which air is automatically mixed with petrol vapour so as to form an explosive mixture.
2. A combustion chamber, to which a portion of this explosive mixture can gain access and be there burned, so as to generate the energy needed for working the motor.
3. An ignition apparatus for igniting the explosive mixture.
4. An engine so constructed that the potential energy of the exploded carburretted petrol air can be converted into motive power to propel the vehicle.

It is to the mechanism of this engine that I wish to direct attention for the moment, as it is its construction that is indirectly responsible for the chauffeur's fracture. All petrol engines are "reciprocating ones," that is, they have the straight up and down motion of the piston in a cylinder converted into the necessary circular motion by means of a connecting rod and crank. Such an engine is also intermittent in its action, and to get over this there is fitted to the crank-shaft a flywheel, whose work is to store up energy and carry the crank over the dead centres. Further, there has been introduced into this engine the four-cycle method of working, first put into practical form by Dr. Otto in 1876 in his "silent" gas engine, and known as the "Otto cycle." This is one of the most brilliant mechanical arrangements that has ever been devised, for it introduces the real and fundamental improvement of first compressing the amount of explosive mixture in the cylinder of the engine before firing it, thus increasing enormously its potential energy, just as a quantity of gunpowder burned in the open air will not have the explosive force it evolves when ignited under pressure in the barrel of a gun. It is this compressing power that is the distinguishing and advantageous feature of the "Otto cycle."

It is not necessary to go into details about all the four movements of the piston, known respectively by the names suction, compression, explosion, and exhaust strokes, but a study of them would show that to set in action the series of explosions which really furnish the motive power of the car the mechanism of the petrol motor must be first started mechanically. The method of starting in vogue is by means of a handle, about a foot long, which is attached to the crank-shaft of the engine, usually at the opposite end from the flywheel. When this handle is turned the piston of the engine goes through all the four different strokes mentioned above, including the ignition of the compressed explosive mixture. This explosion takes place just as the third downward stroke has begun, with the result that after a couple or more complete revolutions of the handle the engine goes on working automatically, and the working handle is removed. It is the handle that is the active agent in causing the chauffeur's fracture, and it may do so under different conditions. In the first place, the fracture may happen at the removal of the handle, for if at this time the chauffeur is leaning too much weight on it, or is holding it with the thumb round it, he may not be able to disengage it, with the result that his hand will be carried round with the revolving handle and severely twisted backwards by the rotatory movement. Another time at which the fracture may occur is during the working of the handle. This is not an easy matter, especially in the upward strokes which compress the explosive mixture. The reason of this is that the pressure to be overcome at this time is often considerable, possibly 60 or 70 lb. per square inch, and it is as much as the operator can do to accomplish it. Consequently there is a liability for the hand when it is at its upper limit of the stroke to swing back, and if the handle is being grasped with the thumb down, both handle and hand are carried round together, giving a severe backward wrench to the wrist.

Lastly, the flying back of the handle may be due to a third cause, viz., a "backfire," which means that the explosive mixture in the cylinder has been ignited too soon. As already mentioned, this ignition should take place just as the connecting rod of the piston has passed the dead centre of the crank, and when the piston has just started on the third or downward stroke. If, however, the explosion should occur prematurely before the crank has passed the dead centre of the engine, the result is that the piston is arrested in its cycle of strokes, and is driven violently backwards in an opposite direction, carrying the crank and handle with it. Should the chauffeur at once get his hand disengaged from the handle, no harm is done, although the revolving handle may inflict a severe blow on the wrist or on any other part of the body, as in a case where a chauffeur was struck in the face and his nose seriously damaged, owing to his standing in a stooping position over the handle. If, however, it happens that the chauffeur is firmly grasping the handle, with his thumb underneath it and his knuckles upwards, he will be unable to get his hand away, with the result that it will be forced downwards with the handle, and bent backwards at the wrist with very considerable force.

Under any of these three conditions the chauffeur's fracture may occur, but the last is the usual cause of it, as it is accompanied by the most violence. The seat of the fracture is the lower end of the radius. The line of it is transverse, and fairly regular, and it carries off the whole articular surface of the bone, although stopping short of that it may pass into the joint. The broken-off portion in each of these situations is triangular in shape, and includes the styloid process of the radius. Practically the radius gives way at its weakest part, just as it does in Colles' fracture (see Figs. 1 and 2).

As regards the symptoms presented by these cases, they were not specially distinctive, resembling in some respects a severe sprain of the wrist. Swelling of the joint and pain on movement were present in both cases, and in one of them crepitus was quite distinct. It was not elicited in the second case, as I did not see the patient until a week after the accident. I learned, however, that it had been regarded as a sprain, until an *x*-ray photograph revealed the existence of a fracture. In both of these cases under my care there was a complete absence of the characteristic deformity that marks Colles' fracture.

The treatment followed in both cases was the use of Carr's splints, with early movement of the fingers, the splints being worn for about three weeks. In both cases the result has been good, and practically no deformity or stiffness has resulted.

Let us now briefly consider the causation of this fracture at the wrist, which may happen to anyone in starting a petrol motor car. As we saw, it consists in the breaking off, close above its articular surface, of a triangular portion of the lower end of the radius, the portion broken off carrying with it the styloid process of that bone. Further, from what has been said, there are evidently three conditions under which it may occur. Although, as I pointed out, these latter may vary in the amount of violence accompanying them, there is one feature common to all three, and that is, *they twist backwards or over-extend the hand while it has a certain amount of outward rotation or ulnar deflexion.*

Now it must be remembered that whether we regard the wrist-joint as belonging to the ball and socket order (enarthrodial), or to the gliding variety (arthrodial) of joints, rotation is the only movement it does not admit of. In the accident I have described this evening a certain amount of rotation occurs while the hand is over-extended. In addition to this, it must be borne in mind that at the moment the over-extension of the hand occurs all the muscles of the forearm are rigid and fixed in the strong effort that is being made. The view, then, that I take of this chauffeur's fracture is that it is caused by indirect violence, and is the result of sudden over-extension of the hand while the latter has some ulnar deflexion, this latter factor being the element that determines the triangular shape of the portion of bone broken off.

In connection with a fracture so situated, and so caused, one naturally asks, what relation does it bear to the fracture which we instinctively associate with all injuries at the wrist, viz., Colles'? My own feeling is that it is closely allied to it, and furnishes evidence that is of interest and that has a very distinct bearing on some of the disputed points in the pathology of that fracture. As originally described, Colles' fracture meant a transverse fracture through the lower end of the radius, with displacement backwards of the lower fragment, leading to the presence of that peculiar appearance of the wrist termed by Bigelow "the silver fork deformity." In addition to the backward displacement, the upper fragment was often driven into the lower one, and, indeed, impaction was regarded by many as an essential feature of the fracture, or, at anyrate, as an almost constant accompaniment of it. This impaction, and the cause of the deformity, have been much discussed points. The generally accepted views now are that impaction is not a constant condition, and that muscular action does not induce the deformity. It is the direction of the causal force that is responsible for the latter. That causal force falls usually (1) on the the palm of the hand, or (2) on the front of the wrist. In the former, the explanation of the fracture is probably what is known as "the cross-breaking strain" theory of Professor Gordon of Belfast. In his opinion the fall on the palm of the hand bends back and hyper-extends the wrist, "putting the anterior carpal ligaments and flexor tendons violently on the stretch, and wrenching off by the cross-breaking strain the lower end of the radius, and tilting it backwards with alteration of the aspect of its carpal surface." When the fall is more on the front of the wrist, the cross-breaking strain theory, however, scarcely comes in, and it is thought the anatomical structure of the lower end of the radius induces the fracture, for in a fall on the wrist the blow falls on the carpus, and the propulsive force is received by the lower end of the radius, which breaks at its weakest part, viz., where it is composed of cancellous tissue. A continuation of the force drives the lower fragment backwards, and thus induces the characteristic deformity. It seems to me that the condition found in chauffeur's fracture should lead to some modification of the views held as to the exact mechanism of Colles' fracture. Since Colles' description of it, further clinical experience with *x*-ray work has thrown a good deal of light upon the subject. As the result of this source of information, we now know that the seat of the lesion is often at a lower point than that at which Colles fixed it, and, further, that the styloid process of the ulna is generally broken off at the same time as the radius is fractured. Probably, however, the most important points brought out by skiagraphy are that the degree of deformity in Colles' fracture is a variable quantity, being, indeed, sometimes absent, and, secondly, that the line of fracture is not always completely across the bone, but sometimes passes into the joint, just as in chauffeur's fracture (see Fig. 1). Knowing as we do that this latter is caused by hyper-extension of the wrist when the hand has an ulnar deflexion, I consider that we should reclassify cases of Colles' fracture, and group them in the two divisions of (1) those with the usual deformity, and (2) those without it, or, indeed, without any deformity at all, the latter being due to falls *on the palm of the hand* when it has an ulnar deflexion, and the former arising from direct falls *on the carpus*, the propulsive force being transmitted directly to the radius, and not only causing the fracture, but afterwards inducing the characteristic deformity.

The lesson taught by the chauffeur's fracture, which is really a Colles' fracture, is, I think, the important one that there may be a Colles' fracture without the typical deformity. This fact is not sufficiently recognised, and many so-called sprains of the wrist are reckoned to be such because there is no deformity. This was what happened in the case of which Fig. 3 is a skiagram. It was caused by a fall on the palm of the hand when high jumping, and was pronounced by a medical man to be a sprain. The *x*-ray photograph showed the presence of a fracture, which in every way represents the triangular bit broken off in the chauffeur's fracture. This is what might be expected, for in both hyper-extension of the wrist is the exciting factor.

Just a word as to the prevention of chauffeur's fracture. It can be largely avoided by having a proper hold of the handle. This should be grasped with the knuckles down and the thumb placed over. In this position the handle is easily released if a back-fire should occur. In addition, there are arrangements in the machinery, I understand, by which the ignition of the explosive mixture may be retarded at the time of starting, and all experienced motorists attend to this point.

AN OBSTETRIC DIARY OF WILLIAM HUNTER, 1762–1765.

Edited, with Notes, by J. NIGEL STARK, M.D., F.F.P.S.G.,

Surgeon, Royal Samaritan Hospital for Women; Late President, Glasgow Obstetrical and Gynæcological Society; and Assistant Physician, Glasgow Maternity Hospital.

Introduction.

While distinction in medicine and in historical or antiquarian research is not rarely combined, as exemplified by Sir James Y. Simpson in the past and Sir Arthur Mitchell in the present, the majority in our ranks who are interested in such work, lacking time and opportunity, must be contented with vicarious gleaning in the fields of history and archæology. Such recreations, in our scanty and uncertain leisure hours, allow us to leave ourselves and our affairs for a while, and to reproduce in our mental vision scenes in the life-dramas of those who have already played their parts on the world's stage. By the kindness of the late Dr. Young, Professor of Zoology in Glasgow University and Keeper of the Hunterian Museum, I was, a few years ago, favoured with a perusal, and afterwards with a transcript, of the diary written by William Hunter during his attendance at the first three accouchements of Queen Charlotte, wife of George the Third. It is rarely that we have an opportunity either of reading a medical journal of such a character or of getting beneath the trappings and the outward show of royalty—all the more interesting in this instance because, while of the olden times, it is yet comparatively near our own days—and of viewing at close quarters that artificially created product of society in its personal and domestic aspects.

This diary I have at last found time to study, and I venture to publish it, along with some explanatory and reminiscent notes, in the hope that others may find it as interesting as I have done, and that it may throw some additional light on certain manners and customs, medical and social, in the second half of the eighteenth century. Although most of these are dead and gone, like all of the personages mentioned in the diary, they are yet bound to our own times by very few links. This was vividly brought home to me by a paragraph in the interesting reminiscences of Sir Algernon West, published lately. He is not old as the word is used nowadays, and yet he can tell that he has "known a lady whom Thackeray says had been asked in marriage by Horace Walpole who had been patted on the head by George the First. This lady had knocked at Dr. Johnson's door, had been intimate with Fox, the beautiful Georgina Duchess of Devonshire, and that brilliant Whig society of the reign of George the Third."

I have considered the diary to be best worth reproducing in its entirety, and with absolute fidelity to the original manuscript, even as to repetitions, contractions, inaccuracies, and evident slips of the pen. It is in Hunter's handwriting from beginning to end, and bears indubitable evidence of having been elaborated from daily notes. If glanced at casually it may seem to "chronicle small beer," to be a commonplace record of everyday, trivial details, unworthy of rescue from oblivion; but under more careful examination much that is interesting is revealed, and some light is thrown upon customs that now appear curious and *outré.* It also affords us an opportunity of becoming more intimately acquainted than has hitherto been our privilege with certain personages, who will be held in remembrance until time is no more.

Sir Thomas Browne has wisely said, "'Tis opportune to look back upon old times, and to contemplate our forefathers."

CHAPTER I.

THE DIARY.

3rd May 1762. I had the honour of making my first visit. Mr. Hawkins informed me that her Majesty, before her marriage, had had very good health, and had been very regular in menses—that the last were Oct. 27th, from which therefore the reckoning was to commence.

During the first 18 weeks there had been no material complaint. At that period she was taken ill at Chappel with giddiness, palpitation, difficulty of breathing, and with a pain round the Hypochondria: for which he bled her 6 ounces, and upon keeping quiet all the symptoms went off.

It was then supposed she had quickened.

From that time to this (viz. 3rd May) her health had been in pretty good order, except that at different times she had a cough, but without any pain and without any considerable heat. She had taken at times Wormwood draughts with Sp. Ale, and occasionally a little Tinct. Rhubarb [word illegible] at night so as to keep the body open: and it had answered the intention very well.

In the very end of April and beginning of May her cough and heat increased: and on the 2nd of May Mr. Hawkins thought it would be proper to bleed: and desired that I might be consulted. We saw her together next (this) morning.

The pulse was quiet and the skin temperate: yet as the cough was considerable enough to shake the body very disagreeably and as she had been giddy the day before and had bled a little at the nose, we thought it safest to take away 5 ounces of blood. She consented, tho' she disliked bleeding. She had from time to time, likewise, used a mixture of Linim. Vol. and Sapon. to her left side about the short Ribs, where she frequently felt a good deal of pain, as if it was in the muscles, and she thought it made her easier.

I advised a continuation of the Liniment, of the Saline draughts with Sperm. Cet. and of the Rhubarb as there might seem occasion, and we recommended air & moderate exercise.

May 10th 1762. In the Drawing Room her Majesty was seized with giddiness and was faint. She retired in haste. Mr. Hawkins immediately gave some Sal. Volat. in a glass of water, and she was presently quite well again.

When I heard of this I was afraid that her Majesty was taking more fatigue than she could bear, and wrote to Mr. Hawkins that it might be well considered and he afterwards told me that he presented my letter to the K.

28th of June 1762. Monday. Mr. Hawkins informed me that on Saturday night her Majesty complained of some pain in the lower part of the Back, and on Sunday morning had a little hurry from a kind of palpitation, which however went off immediately upon taking some Root drops. This was at her own Palace in the Park. Mr. Hawkins had upon this particularly recommended greater quiet, and that she would no more go either to the Chappell or Drawing Room. I was of the same opinion; and desired she might avoid not only those but any thing that could *in the least* tire or hurry her: and to take two spoonfuls of the following Julep.

℞.—Aq. Ros.
— Menth. Pip. aa ℥iii.
Spt. Volat. Arom. gutt. lx.
Syr. Caryophyll ʒiii. M.

I desired Mr. Hawkins to watch her symptoms, that she might be again bled if there should be indication.

July 15 or 16. I wrote to Mr. Hawkins to the following purpose —"I am clear in my opinion that it is judicious practice to take away some blood in the last month of pregnancy when the patient is heated or has symptoms of fullness—that as labour is not a disease, it does not require that the constitution should be reduced by way of preparation, and therefore when the patient is cool and has no marks of having too much blood, the taking it away cannot do good and may do harm.

But the intermediate degrees are so various that it is often in practice difficult to determine, &c.

From your account I should think that there is no occasion to bleed under the present circumstances, but only if at any time it should seem necessary.

But in a case of so much consequence it might perhaps be proper to have a consultation on this point with Physicians."

Two days after this Mr. Hawkins informed me that he had laid my letter before the K., who said he saw no occasion for bleeding or consultation.

From this to the time of her delivery she continued in very good health, took air every evening, and through the day was at her own house in the Park.

August 12 1762. Being called I came to St. James's at ½ after 5 in the morning. Mr. Hawkins told me that the Queen had been as usual over night and was taken ill at 4 o'clock, after some good sleep.

A little after six Mrs. Draper came to us and told us that all was in a very natural way, but that the appearances indicated that it would be slow.

At ½ after seven, when I little expected it, from what Mrs. Draper had told us, the Prince was born.

Soon after this we examined him all over, and found him perfect, with every mark of health, and of a large size. Then we examined the placenta which was sound and very compleat, and Mrs. Draper told us that the Queen had had a very good time, and was very well.

A little after 9 when her Majesty was shifted we saw what was taken from the bed, and found it just moderate or what is most common: then I saw the Queen (who had taken a little N. mug and Sugar after delivery) and found her without any complaint and with a good pulse. We ordered for her Majesty

℞.—Spt. At. Sol. ℈i
Pulv. Contr. C. ℈ss.
Aq. Alex. Simp. ℥iss.
— N. M. ʒiss.
Syr. Croc. ʒss M ft haustus
6ta quaque hora sum.

and for the Prince

℞.—Ol. Amygd. d. ʒii.
Syr. Ros. ℥vi.
Rhubarb gr. iii. M.
Cap. Cochl. parvum omni hora.

At 12 o'clock we saw the Q. again and found her perfectly well and her pulse more quiet than when we left her in the morning. She had taken some broth and one draught and had had a refreshing sleep. She desired to live some days upon broth, caudle and tea, rather than to eat chicken.

The Prince had taken the 2nd large Tea Spoonful of the purging mixture, was quiet and looked extremely well.

At 6 in the evening the Q. had slept an hour and was remarkably well. She had eaten with appetite—had made water plentifully and with ease—the cloaths were of a full colour and in plenty. She now took her 2nd Haustus and was ordered a Spoonful of Wine in each half pint of caudle.

At this time the Prince had his first stool and made water but had not sucked.

At 10 at night we were informed that the Q. was well, and therefore did not go in. We gave orders that if any considerable *rigor* should come on within 36 hours from delivery to give immediately a small glass of Brandy and to send for me.

The Prince was quite well, had had another stool, & had sucked several times.

Friday, 13 Aug. 1762. At ½ after 10 we visited the Prince. He looked well, had sucked and slept comfortably through the night, and had 3 or 4 stools. Order: to let the Beast (*sic*) be his principal support, but to-feed him twice a day, as had been the custom in the Princess of Wales' family. The Princess desired a little milk to be put into the Pap.

The Queen had rested well, particularly had one continued sleep from midnight to four o'clock; her pulse remarkably quick, yet not slow. She was chearfull and said she had no complaint; cleansed well and still of a deep or full colour, and made water easily; had no desire to eat chicken: thought the draught made her thirsty, therefore I wrote thus

℞.—Spt: At. Sol. ℈i.
Pulv. Contr. Co. ℈ss.
Aq. Ros. ℥iss.
— N. M. ʒi.
Syr. Ros. ʒss.
ft haust 6to quaque h. Sum.

Her Majesty asked if she might see the Prince. We allowed it with proper caution and gave Direction to Mrs. Scott.

At 7 in the evening. The Prince perfectly well.

The Q. had taken plenty of Berry or caudle (which she liked better than broth), and bread and Butter with Tea, had slept ½ hour twice,—was in chearful spirits and fine perspiration. The clothes still of deep colour, ordered to continue.

Saturday 14 Aug. At 11 o'clock the Prince well.

The Q. had no complaint—had passed the night comfortably; having slept in all 9 hours,—felt her breasts a little heavy.

After 6 in the Evening.

The Prince well.

The Q. in all respects well. The milk ran out freely from both breasts which were quite easy. In the afternoon there had been a very small stool. The cloths were now changed—pale and a little offensive.

Sunday 15 Aug. At 11 o'clock. The Prince well.

The Q. had had as good a night as ever, the milk running plentifully—had been shifted and moved in bed just before we came in, and therefore the pulse was a little quicker than it had been: but no heat. Was desirous of doing nothing but what we thought most safe. Ordered a Draught immediately with the addition of Magnes Alb. ℈ii.

The same Regimen continued.

At 8 in the evening:

The Prince well.

The Q. had had a good stool & was well. Ordered the Draught as usual at night only.

Monday 16 Aug. At 12 the Prince well.

We had some conversation with Lady Char. Finch about Mrs. Scott's going into the Garden or Park for air. We found that the

Pap was without milk, the Princess of Wales having said as the child is well let there be no change.

The Q. had slept well and had a good stool in the morning. Ordered a Draught at 1 o'clock. She did not chuse to eat chicken nor to get up.

At 8 in the Evening:

The Prince well.

The Q. perfectly so, and laughed heartily. Ordered the Draught at night.

Tuesday 17 Aug. At 12. The Prince was perfectly well. We saw two of his stools which were of the best kind, and the cloths quite wet with his water. He was washed all along with cold water.

The Q. had had two good stools in the morning, and was so perfectly well that we told her she should have no more Draughts, & ought to get up.

At 8. The Prince well.

The Q. had been on the couch above an hour, & well.

Wednesday 18th Aug. At 12. The Prince well.

The Q. had a good night & a little stool in the morning. Would not eat chicken nor get up, from great Caution.

At 8 at night both well.

Thursday 19th Aug. At 12. The Prince quite well.

The Q. last night soon after I was gone had a loose stool, and presently another very watery one. Mrs. Draper had given her a cup of Aq. Puleg. and Hystine. Her Majesty however had a good night, and her bowels were quite easy: from which we concluded that those stools had been salutary in carrying off some of the milk.

At 8 in the Evening both were well. The Queen had been up.

Friday 20 Aug. At 12. The Prince well.

The Q. perfectly so: was to eat chicken, & get up on the couch; had a stool.

At 8. Both well. The Q. eat with appetite almost a whole chicken, and was up 3 hours and felt quite well.

Saturday 21 Aug. At ½ past 11.

The Q. had slept from 10 to 7 without waking, and was perfectly well. The milk still ran from the breasts; the cloths were still pale, and very little in quantity. She was to sit up dinner and Tea for refreshment.

Sunday 22 Aug. The Q. well. The Prince had a kind of fainting fit on the Queen's Bed, occasioned as we supposed by having been laid with his head low just after sucking. He took a little Peppermint Water and was instantly well again.

Monday 23 Aug. The Prince continued well. The Navel String fell.

The Q. took her usual dose of Rhubarb with good effect.

Friday 27 Aug. The Q. perfectly well.

The Prince a little griped, ordered Pulv. Bezoard gr. vi h.s. Mrs. Scott the nurse was a little out of order.

From this time the Queen & Prince of Wales continued so well that I seldom went in to her Majesty.

In the last week she took two doses of her Rhubarb, and recovered her strength perfectly.

When about 6 months old the Prince of Wales had a considerable Rash. I attended with Sir Ed. Wilmot and Dr. Duncan several days: we considered it a symptom of Teeth, & hardly did anything. He was quite well.

This Rash at times grew very rank, and rather alarming to the King and Queen. I gave it as my opinion that it was the common scabby humour which attended teething, & that it was unnecessary to do much for it, because it would not leave him till he had got all his Teeth whatever was done, & that it would go off without medicine. It was accordingly observed to grow rank when he was cutting a tooth, and grew almost well in the intervals, & left him when he had cut the 20th. He sucked nine months.

The Queen's 2nd Lying-in and Birth of Prince Frederic.

16 Aug. 1763. The Reckoning was nearly the same as of the first child. Her Majesty was all along so well that there was no occasion for my being consulted. She at last took a resolution to Ly-in at her own house rather than at St. James' for the sake of more air.

Aug. 16th 1763. I was called at Eleven in the Forenoon, and was informed first by Mr. Hawkins and then by the King who presently came in to me, that the Queen, after complaining lightly for about two hours, was delivered with 3 pains of a fine Boy so that there was not time to call the proper people together. He said that he had ordered Mrs. Draper to give him information when the Labour seemed to be near; but that instead of receiving such information, in good time as he expected, the screaming of the child was the first notice he received: Then, accompanied with Mr. Hawkins, I saw Mrs. Draper who told us that she was called from St. James', where she had been in waiting some days, at nine o'clock in the morning,—that she upon her arrival, found the water broken, and that the Queen was wet even to her stockings; upon which she immediately got the Bed properly made, and put her Majesty into it —that the pains continued so trifling that she did not imagine the Queen was near delivery, till three strong pains came suddenly and close together and finished it. This she *said*. We examined the placenta wh we were told took more time to come away than in her Majesty's first Labour, and found it and the discharges in the most natural state. Then we saw the Queen, who was well, but rather a little low. We ordered for her Majesty the Draughts, 6to quaque hora.

The young Prince was next seen: he was then dressed: he looked well, but was not so large as the Prince of Wales when born. We ordered for him the mixture

℞.—Ol. Amygdal d. ʒii.
Syr. Ros. ʒvi.
Rhubarb gr. ii. M.
Cap. Cochl. parvum omni hora.

At 8 in the Evening the Q. was well,—had sleeped—had made water 3 times with ease—had taken no draughts—had the very least pinches of afterpains. We saw the Prince with Lady Charlotte Finch. He had had 4 large stools, and was a little cross, so that we judged him to be a little hungry and put him to the Nurse's Breast. He sucked at once and became perfectly quiet.

Augt. 17th. At 10 in the morning we found that the Q. was in all respects well and had sleeped well.

The Prince was perfectly well. At 7 in the Evening the Q. was so well that we did not go into her chamber.

The young Prince was a little griped: we ordered another bottle of his purging mixture.

Augt. 18. At 10 in the morning the Q. was well.

The young Prince this morning had the first yellow stool: so that now all the meconium was come away. He was undressed, and we examined him all over, and saw that he was perfect, and had a very well shaped head. He had a little Rash upon his skin.

At 7 in the evening the Q. was well—the milk was running freely from both breasts, with very little fullness.

Augt. 19. At 10 in the morning the Q. was perfectly well: the milk running out—the Lochia changed—but she had been almost melted with the heat of the night which indeed had been excessive. We ordered the door of the adjacent room to stand open, and a window in that room to be put up, and to take no draughts as she perspired so profusely.

The young Prince quite well. At 7 in the Evening the Q. was still well, but complained of being melted with the heat of the weather. There had been much Lightening all day, with a storm of Wind, Rain, and Thunder. As she had had no passage, a spoonful of Rhubarb Tincture in a little Pepper Mint water was prescribed.

Augt. 20. At 10 in the morning we found the Q. in all respects well, and that having had a good natural passage in the evening, there had not been occasion to give the Tinct. Rhub.

The young Prince well.

In the Evening both were so well that we did not go into the Q.'s chamber.

Augt. 21. At 10 in the morning we found the Q. perfectly well. She had just had a natural right stool.

The Prince was perfectly well.

In the Evening we saw only the King, who told us that the Q.

had been upon a couch near [word omitted] hours, without feeling in the least weak: which was being better than when she lay-in of the Prince of Wales.

From this time her Majesty continued to recover daily, and regulated herself in all things by what she had done in her first lying-in, which she said she chose to do because she had succeeded so well.

Between this Prince and her 3d son she had or was supposed to have a Miscarriage at Richmond, of which I only received accounts from Mr. Hawkins.

Prince Frederick sucked eight months.

The Queen's 2nd (sic) *Lying-in and the Birth of Prince William.*

21 Aug. 1765. Her Majesty upon the whole had good health, only as usual pretty much sickness and languor for the first four months.

I was called at 4 o'clock in the morning, and was told that her Majesty had dined at Richmond the day before, and came home at nine o'clock, and felt as if tired, went to bed rather uneasy; and at one o'clock found that it would be her Labour. It had advanced in the most kindly way, & she was delivered between 2 & 3 in the morning.

I found her perfectly well and without after pains, and a moderate discharge, and therefore desired her Majesty to take a cup of gruel and compose herself to sleep.

The Placenta was entire.

The Prince was a small well made child. I, with Mr. Hawkins, ordered the draughts for her Majesty, and the mixture for the young Prince as usual.

At 11 o'clock I found her Majesty well. She had slept & had made water.

The Prince had a stool.

In the Evening the Q. was well. The Prince had had several stools & therefore it was ordered that he should be put to the breast.

Aug. 22. The Queen had rested well, especially in the latter part of the night. The discharge moderate: no·complaint whatever. The Prince had sucked perfectly, and had had a number of stools.

In the Evening, the Q. well, had eat some thin broth with bread.

The Prince well.

Aug. 23. In the morning I found that the Q. had slept but little in the beginning of the night through heat—but perfectly well. Ordered the door to be set open from time to time. The milk had run out from one breast,—almost no discharge.

The Prince well.

In the Evening the Q. was perfectly well—had a stool. The discharge better.

The Prince well.

24 Aug. In the morning the Q. was well—the milk running out profusely—had a stool—the discharge little and pale.

The Prince well.

Both, in the Evening, were well. The discharge as in the morning. She had eaten chicken broth with barley heartily.

25 Augt. The Q. had rested well all night, tho' it was very hot—had a stool this morning. The milk continued to run out profusely. She desired having the draughts every six hours still, as she liked them for being cool. The Prince well. The Nurse still kept her own child.

(*To be continued.*)

THE VASCULAR SYSTEM AND THE FIBRO-MYOMATA.[1]

BY S. J. M. CAMERON, M.B., CH.B.,
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ONE does not find a great deal of information regarding this subject in the literature on the fibro-myomata. I do not endeavour to place before you this evening any elaborate observations on this subject, but rather to submit for your consideration certain more or less definite conditions which I found in my routine examination of a large number of specimens. It has been the custom to describe these tumours in a general way as being hard and avascular. In certain cases, however, there may be present in the tumour such a peculiar vascular change that the term "telangiectasis" may be applied to it. An almost constant increase in size will be found in the vessels enclosed between the layers of the broad ligament. An attempt has been made to associate clinical characteristics with pathological findings. I have made no observations on any change in the cardiac muscle, but this has been described by those who have had opportunities of doing so. One would almost suspect that degenerative changes would result in it, owing to the fact that it is the earliest muscular structure to be involved when excessive and prolonged hæmorrhage is present. One would attribute some of the cases of sudden death during the convalesence from operation to this change or to embolism. Clinically one does not often detect cardiac hypertrophy in uncomplicated cases.

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[1] Read at a meeting of the Glasgow Obstetrical and Gynæcological Society held on 27th November, 1907. Photographs and microphotographs were shown at the meeting.

Submucous tumours and the vascular system.—These tumours, as a rule, depend on the vessels in their pedicle for their blood-supply, and thus if a submucous tumour escapes by degrees and the cervix dilates easily it may go on growing in the vagina for a considerable time. If, on the other hand, it is expelled suddenly, fatal hæmorrhage may result from rupture of the vessels in the pedicle, or later from septic infection of a tumour lacking an efficient blood-supply. I would, however, point out another way in which a disastrous result may occur. Some polypi depend for most of their blood-supply on the vascularity of the endometrial covering, as some polypi are found to be clothed by an endometrium which contains many blood-vessels, while others derive almost their entire supply by way of the pedicle. Now if the cervix contract directly on the thick portion of the tumour when it is partially projecting from the cervix a fatal result may ensue. The blood-supply is cut off, and ulceration and septic infection result in the lower portion of the polypi. Such was the case in the specimen of which Fig. 1 is a photograph. One can see in the upper third of the picture a line of constriction produced by the grasp of the cervix. If the whole tumour had escaped gradually into the vagina, or even suddenly without rupture of the pedicle, the risk to the patient would have been greatly

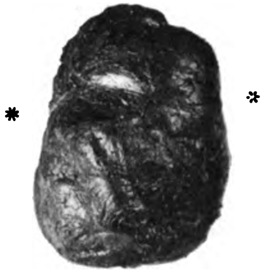

FIG. 1.

Photograph of a submucous fibro-myoma. The cervix contracted on it, producing the depression seen between the asterisks. A sloughing area is seen to the right below this level.

diminished, as the cervix would require to contract very considerably before compressing the narrow pedicle. In some instances, however, the cervix may close on the pedicle and produce an œdematous condition in the tumour with subsequent ulceration on its surface, or even if the cervix and pedicle be not closely approximated a similar change may result from thrombosis of the vessels in the pedicle.

In the case of the submucous tumours, which cause more hæmorrhage than any of the other varieties, the bleeding takes place from the general endometrium, but more especially from the endometrium covering the tumour. These areas can be best seen immediately after the operation, when they are noted as dark red patches with fairly well-defined borders. The small surface vessels rupture and the blood escapes into the uterine cavity and surrounding tissues.

Uterine and ovarian arteries.—Fibro-myomata very frequently are accompanied by marked increase in size of the ovarian and uterine arteries. In a well-marked condition the vessels may approach in size the common carotid; they are frequently greatly increased in length and markedly tortuous. On microscopic examination it is found that the circular and longitudinal muscular coats are very much hypertrophied, and in some cases there is a tendency to excess of fibrous tissue, especially in the internal coat. There is frequently a certain amount of endarteritis, but, as a rule, this condition is not severe.

Clinically it has been observed that uterine fibroids are frequently accompanied by a blowing murmur, like the uterine souffle, but the seat of such a murmur has not been accurately described. Many seem to think that it is due to the circulation of the blood in the tumour itself, but I am quite convinced that it is usually produced in the vessels of the broad ligament, and somewhat less frequently in the vessels underlying the peritoneal covering of the growth. In support of this statement I have on two occasions, in cases where those large vessels had been elevated by the tumour growth into the abdominal cavity, been able to determine the situation of the pulsating vessels by abdominal palpation, and at the same time to note that in these localities the blowing murmur reached its maximum intensity. Occasionally, in a very mobile tumour, the pitch of the note can be altered by changing the position of the tumour. Again, I have noted well-marked bilateral murmurs in a fibroid where almost complete cystic degeneration had taken place, so that it is unlikely that such a murmur could be produced by circulation in the growth. It has been stated by some that such a blowing murmur is not detected in ovarian cysts, but I have seen a case of ovarian cyst in which there was an extremely loud blowing murmur, at operation the pedicle was found to be large and vascular, so that there is strong evidence in support of the production of such murmurs in the vessels contained between the layers of the broad ligament. In some cases, however, where the murmur is best heard in the mid-line, it will be found at operation that considerable enlargement exists in the blood-vessels underneath the serous covering of the tumour.

The small branch of the deep epigastric which runs in the round ligament increases greatly in size when fibro-myomata are present in the uterus, so that care should invariably be exercised to secure the round ligament separately at the time of operation. The muscular tissue in this ligament is also increased, and thus, if too much surrounding tissue be enclosed with it, there is a tendency for the ligament to shrink free of the encircling ligature, and retro-peritoneal hæmorrhage may occur. When this takes place the peritoneum will be found pushed forward.by the blood, and if hæmorrhage be allowed to continue, rupture into the general peritoneal cavity will result.

Necrobiosis: Red degeneration.—Since Fairbairn made his communication to the Obstetrical Society of London, I have been on the outlook for examples of this change, and it may be noted in 3 per cent of fibro-myomatous tumours, but it is found most commonly in tumours complicated by pregnancy. In my series it was present in five specimens. In two the tumours had been removed by myomectomy from pregnant uteri, and in the remaining cases two occurred in married women, but only one of these patients had borne a child, and the third was found in a tumour removed from an unmarried girl, aged 26 years. The patients' ages were 48, 29, 40, 26, and 34 years. In one of the non-pregnant cases the patient commenced to feel in poor health, and this was accompanied by an increase in size of the abdominal tumour. In the other non-pregnant cases the patients felt ill, and there was very great tenderness when any pressure was applied to the tumour surface. The patients appeared cahectic, and there was an elevation in the temperature, which ranged from 99° to 100·4°. In all the cases the patients suffered considerably from mental depression. In one of these cases the tumour had also increased markedly in size. It may occur in a young subject in whom the growth cannot have been present for any lengthened period, or it may affect a tumour which has been diagnosed many years before; thus, in the patient, aged 48 years, a fibro-myomatous tumour had been discovered about eighteen years previously. In this case there was a great increase in the size of the tumour shortly before she was operated on. The growth extended up to the diaphragm, and the operation was complicated by omental and intestinal adhesions, which may have been due, not to the tumour change, but to a hydrosalpinx which was also present. In four out of the five specimens the tumours were found to be much softer in consistency than an ordinary fibro-myoma. In two specimens the size was very great, one extending to the diaphragm, one midway between the umbilicus and xiphoid cartilage. In the two tumours which complicated pregnancy the tumours were of smaller size, but in one the tumour had produced a retroflexion of the gravid uterus, and in the other pain was a distressing symptom. This pathological change may be suspected before operation when a fibro-myoma is found and the patient appears cahectic, the temperature perhaps being slightly elevated, the tumour feeling softer than usual, and tenderness being elicited when pressure is made on its surface. The presence of necrobiosis can be detected, as a rule, when the growth is divided, owing to the distinct colouration which is present. In the two specimens from pregnant uteri, the change was noted as a livid colouration in the tumour centre. The pigmentation was not regularly diffused throughout the tumour centre, and the variation in the intensity of the colour gave the parts a streaked appearance. In two of the non-pregnant cases the colour resembled closely that of a light pink carnation, and in the third case the colour resembled that of raw meat, and became much darker on being exposed to air. In two of these specimens the uterine tissue surrounding the tumour was lighter in colour than the growth itself. In the three tumours the whole cut surface of the growth showed the colouration, in one varying slightly in intensity, but nevertheless the shade being fairly uniform. In one of these cases, scattered at a few points throughout the cut surface, several small yellow grey areas, ranging from the size of a threepenny piece to that of a shilling, were seen. In another case a later stage of the change was detected when close to the periphery of the tumour a small space surrounded by ragged and darkly-coloured walls was found to exist. It contained some brown fluid, and the whole space measured three-quarters of an inch long by a quarter of an inch wide. It is worthy of note that tenderness on pressure chiefly existed in the region of this space. In the third case, namely, in that of the girl, aged 26 years, whose uterus I removed by abdominal hysterectomy, my note, made immediately after the operation on one of the cystic spaces present, was—"a degenerate portion of the growth, containing dark colloid fluid, which escaped on incision of the tumour. It is about 3½ inches long, and shreds of pulpy, pink coloured tissue project into its interior and float in the fluid." In some cases of œdematous change in fibro-myomata a colouration resembling this is present, and as certain similarities may be observed in the histological changes of necrobiosis and œdema, I am of opinion that the diffusion of blood may occur secondary to œdema, and thus the term necrobiosis may sometimes be applied to the tumour change when the primary degeneration has really been an œdematous one. However, in the majority of cases the symptomatology, the naked eye and microscopic appearances, are sufficient to warrant the grouping of the changes under the heading *red degeneration* or *necrobiosis*.

In four out of the five cases the tumours were intramural, and the fifth, which was situated subperitoneally, was removed from a pregnant uterus. In three of the tumours whorling was present, but in two the whorled appearance, so characteristic of the lighter coloured ordinary fibro-myoma, was absent. It was interesting to find that in the most distinctly necrobiotic tumour of the series the other fibro-myomata present in the uterus were unaffected by the change. It is worthy of note that, despite the red colouration of the cut surface, very little free blood exists, and on microscopic examination only in one case did I find hæmorrhages into the tissues, and these were of small size, so that the condition is most likely one produced by diffusion of blood pigment, with occasionally antecedent œdematous change in the tumour structure. On microscopical examination of the tissue the most outstanding characteristic is found to be the absence of nuclear staining. At parts a whole field may be observed in which scarcely one well stained nucleus exists. At other parts the nuclear staining is distinct, while the tissues surrounding it may show only an occasional stained nucleus, and the nuclei stained may appear merely as fragments in vacuolated spaces.

The cell outlines in some of these parts are indistinct, and a more or less granular or hyaline degeneration is observed. In one specimen, as already mentioned, small hæmorrhagic areas were noted. It is of interest to observe that here, as in œdematous change, no thrombosis is noted in the blood-vessels, and no lesion is detected in the endothelium of the vessels.

Localised telangiectatic condition of a fibroid with tubercular disease of the ovaries and tubes.—This specimen was removed by Dr. J. K. Kelly, and during the operation dense adhesions were found between the tumour and the omentum, so that one was led to study the structure of the growth and the condition of the appendages for a pathological lesion which would account for such adhesions. The uterus is uniformly distended by a large and somewhat soft intramural fibroid, a part of which presents a normal appearance macroscopically and microscopically. The greater part of the tumour has a deep reddish tint, not unlike the colour of a fibro-myoma undergoing "red degeneration."

One can observe, on examination of the cut surface at this part, that a large number of spaces of variable size exist, and on microscopic examination they are found to be dilated blood channels. The walls are very thin, consisting at many parts of a single layer of attenuated endothelium.

The surrounding muscular tissue has also undergone a pathological change, as some parts of it show an absence of nuclei, and loss of definition in the cell outline. The remaining nuclei, however, for the most part are seen to stain deeply, and frequently occupy the centres of vacuolated cells. In some fields they are as numerous as in ordinary fibroids, but here also there is a tendency for the cell outline to become indistinct. Such a change seldom occurs in the fibro-myomata, but cases are on record where the change is pronounced and general.

Another interesting condition present in this case is the condition of the ovaries and tubes, which are matted together, and on examination typical tuberculous lesions are found. This is shown in the photomicrograph taken from a portion of the tube, in which there is abundant newly-formed tissue and numerous giant cells. The ovaries not infrequently remain unaffected in cases of tubercular salpingitis.

A fibro-myoma in which dilatation of the blood-vessels was present throughout the whole tumour substance.—In contrast to the foregoing case of localised telangiectatic change, it is of interest to note a few details of a case in which the change was more or less general.

Fig. 2 is a photograph of a portion of the tumour, which is bounded by a capsule which varies in thickness at different parts of the tumour surface, measuring an inch and a quarter at the thickest part and three-sixteenths of an inch at its most attenuated portion. The capsule can be raised with ease from the tumour surface at most parts, and its colour is slightly darker than the tumour substance immediately adjoining it. At a few points on the surface of the tumour, where large dilated vessels are present, the capsule appears lighter than the tissue of the growth. Immediately within the capsule the light coloured tumour tissue is noted, and an inch or more of this tissue may exist between the capsule and a group of dilated vessels, although, as has been stated, the vessels at a few parts may abut almost directly on the inner border of the capsule. Innumerable dilated vessels exist throughout the tumour, varying in size from those which appear as mere pin-points even under a magnifying glass to some which measure four-sixteenths of an inch or more in length. In most instances the inside of the spaces appears to be distended by blood-clot, but at a few points mucous-like contents project from the divided channels. Large dark areas, having a colour like steak which has been exposed to air for some time, are present throughout the growth, and in contact with these parts smaller yellow cream-coloured areas are frequently noted. In some portions of the growth the yellow tissue can be noted in the form of fine filaments running

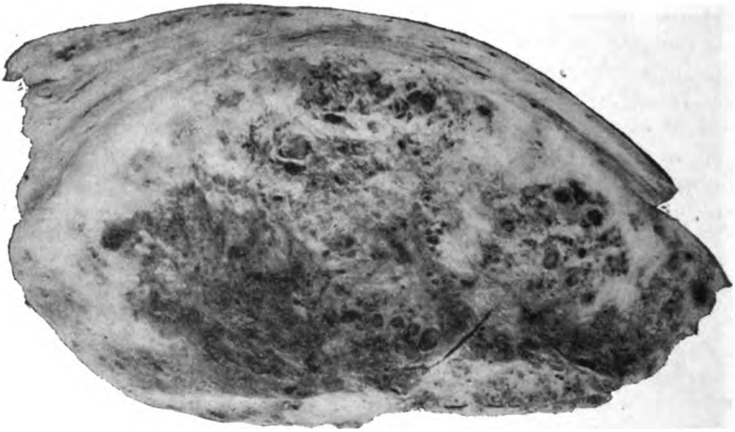

FIG. 2.

Photograph of the cut surface of a fibro-myoma, which is in a telangiectatic condition. The large blood channels and the colouration produced by diffusion of blood pigment can be readily observed.

throughout the dark red areas. Even in the centre of the yellow tissue a few dilated channels may be seen, and occasionally in the middle of the yellow mass a few small patches of the red tissue may be present. No whorling is noted in the growth.

On microscopical examination well-marked changes are seen in the tissues and in the vessels. In the white outer parts the structure is that of a very cellular myoma—at parts, indeed, it almost resembles a spindle-celled sarcoma, so plentiful are the elements, but for the most part the entire tumour has the structure of a myoma. Changes characteristic of necrobiosis (which has already been described) are present almost everywhere. In the very red areas scarcely one single well-stained nucleus is seen, and the relationship of adjacent cells is completely lost, the whole of the tissue appearing as a mere granular area.

In other fields a few fragments of nuclei are seen, and one of these may be detected lying in a vacuolated space. Sometimes a part of the field may appear almost hyaline when viewed under a low power, and this may be in contact with a muscular bundle in which the nuclei have all stained deeply. The cell outlines in the dark-red areas are completely lost. The arteries and blood channels throughout the tumour have all undergone dilatation. In some instances the amount of dilatation is small, whereas in others it may be very great. Many of the arteries have well-defined and muscular walls; the nuclei in their walls may stain well or imperfectly. The blood channels and the arteries are lined by a layer of attenuated endothelium.

Blood-clot of recent formation occupies the lumen of most, and in only one vessel was the process of organisation detected, and here it had only taken place to a limited extent. A large number of the smaller spaces do not contain blood, and it may be that these represent in some instances dilated lymphatics. I would be inclined to classify this growth as a fibro-myoma in which vascular and lymphatic dilatation had taken place, with a resulting necrobiosis in large portions of its tissues.

Torsion of the pedicle.—This process may be acute or chronic. As regards the etiology of the condition we are as ignorant as to the similar but much commoner occurrence in ovarian cystomata. We know that these tumours with their cystic contents usually rotate their pedicles towards the middle line, and the same thing occurred in the two specimens of subperitoneal fibroids under consideration. It is worthy of note that the longer pedicle was in a state of chronic torsion, whereas the pedicle which was short had undergone acute torsion.

This specimen was removed by myomectomy from a patient, aged 45 years, who for six days had complained of severe abdominal pain, and whose pulse-rate was 130 and temperature 99°. On examination, I thought I had to deal with a solid tumour of the ovary whose pedicle had undergone torsion, as the uterus could be partly separated from the large tumour. This accident I have twice witnessed, and have examined a third specimen, and as the complication of acute torsion of a uterine fibroid is of very rare occurrence, the probability of its being a subserous myoma was not entertained. On opening the abdomen the growth was found to spring from the fundus, and the pedicle had three twists from right to left directed anteriorly towards the middle line. A few recent adhesions to the omentum and intestines were present, and the separation of these gave rise to no trouble. There was also a little free fluid in the abdominal cavity. At the same time it was noted that the uterus had rotated forward almost through two right angles, so that the right tube and ovary lay to the left of the mid-line. The tumour was removed by myomectomy, together with another small subperitoneal growth in the neighbourhood, and the congested uterus was replaced. Hysterectomy was considered, but, as the successful result showed, the proper treatment was adopted.

The specimen weighs 4½ lb., and measures 8 inches long and 6 inches deep. The pedicle is deeply injected, whilst the whole tumour surface has a deep red colour, some parts being almost black. At the part most distant from the pedicle the peritoneum is thickened, and covers over a space measuring 1 inch by three-quarters of an inch, which contains clotted blood. The pedicle is short and very fragile. It is about the thickness of two fingers, and a large vein contained therein is dilated sufficiently to admit the tip of the little finger. Two arteries are also seen somewhat compressed. The tumour on section has a dark beafsteak appearance, blood oozing from the cut surface. Large venous sinuses are cut across, from which blood can be expressed. Whorling is distinct, and no spaces containing blood-clot are present in the central part of the tumour. The ovaries and tubes were normal.

On histological examination, the venous sinuses in the pedicle are found to be enormously dilated, and in their lumen blood-clot exists. Everywhere the small capillaries are markedly distended. The arteries, on the other hand, are compressed, and a fair degree of periarteritis is noted. The general muscular tissue shows a diminution in the number of nuclei, this varying in the different fields examined. It can be taken as a rule, however, that where the nuclei are most plentiful there the nuclear staining is quite deep, whereas at other parts large areas are present in which, perhaps, only two or three faintly stained and shrunken nuclei exist (karyolysis).

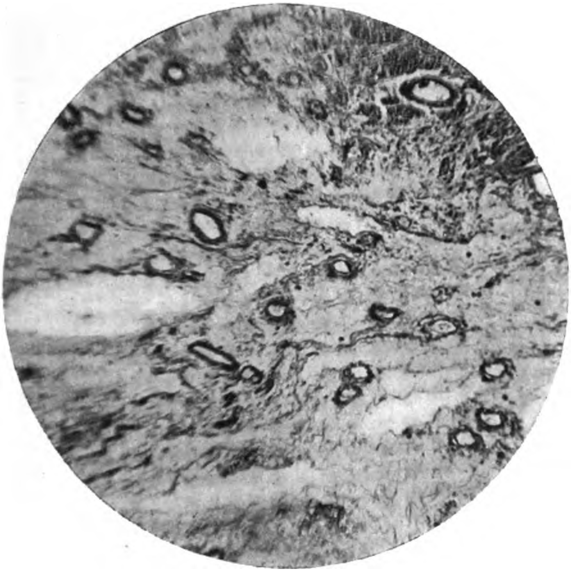

FIG. 3.

Photomicrograph of the tissue of a subserous fibro-myoma, the pedicle of which had undergone acute torsion. Note the disappearance or degenerate condition of the muscular tissue.

In the less affected parts, except for a certain lack of definition in the cell outline, there is no marked change such as occurs in the most distant parts of the tumour. In the latter situations the vitality of the tissue at certain parts has been seriously affected, and the vessels are very numerous and dilated. The muscular tissue in these areas is represented by a few droplets, or by an almost homogeneous material enclosed by connective tissue strands.

It is a point of some interest that the connective tissue can be seen surrounding the muscle bundles and completely isolating it from the vessels. Here and there the muscular tissue of the most distant vessels has suffered, and all that remains of the wall is the elastic fibres, as can be demonstrated by orcein staining.

A REVIEW OF THE SERUM TREATMENT OF INFECTIOUS DISEASES IN THE PRACTICE OF THE CITY OF GLASGOW FEVER AND SMALL-POX HOSPITALS, BELVIDERE.[1]

By JOHN BROWNLEE, M.A., M.D., D.Sc. Glasg.,
Physician-Superintendent, City of Glasgow Fever Hospital, Belvidere.

THE serum treatment of disease began in the last decade of last century with the discovery of the antitoxin for diphtheria, and in Belvidere Fever Hospital this treatment was inaugurated in the year 1894. Since that time not only this serum, but a very large number of others have been tried, and I propose in this paper to give a short description of the results obtained in this hospital by the use of these different remedies. In general it may be said that the first discovered, namely, the diphtheria antitoxin, is up to the present moment much the most important, and that plague serum takes quite definitely the second place though at a considerable distance. Only occasionally are successful results obtained with the others, and these must be considered at present more or less in the light of favourable accidents.

With regard to the antitoxin for diphtheria, there is no doubt at all that it possesses very marked advantages, the specific membrane rapidly separating or dissolving under its use, and the toxic symptoms of the disease disappearing quickly. The great point, of course, is to give the remedy early, and a small dose given towards the beginning of the attack is of much more importance than a large one given later. This is sometimes, however, specially difficult to ensure, as the onset of diphtheria differs in many cases from that commonly seen in other specific fevers. A very considerable amount of membrane may be present for some days, but as no very marked symptoms exist a physician is not called in. Suddenly a change from a condition of apparent health to one of profound illness takes place, and haste is made to obtain assistance, but much irreparable damage has been done. In the earlier period antitoxin is of the greatest use in preventing the development of these serious symptoms, but in the later stage it is not nearly so valuable. I do not agree, however, with those who say that it possesses practically no curative effect on already poisoned tissues; I think that even in the severest cases there is an amelioration of the poisoning, not merely in the direction of preventing the continuance of the process, but in the actual disassociation of the poison from its combinations with the cells of the body. As regards dosage, on the first or second day 3,000 to 4,000 units are probably quite sufficient; later the amount given depends on the gravity of the case. The practice of the hospital is to give 6,000 units as a minimum and about 20,000 units as a maximum. It is also the custom to give what has to be given as far as possible in one dose, as the procedure is somewhat painful, and it is unfair to subject a child to the repetition of the process unless it is absolutely required. Serum is generally given subcutaneously. In the malignant cases, however, it is the custom here to administer it intravenously. Experimentally, intravenous administration has been shown to give animals the advantage of about eight hours over the subcutaneous method, and there is no doubt that in very severe cases, where the glands of the neck are greatly swollen, where oozing of blood from the nose and throat is taking place, or in those cases where a diphtheritic broncho-pneumonia is present, that serum, given intravenously, possesses some advantage over that given subcutaneously.

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[1] Read at a meeting of the Glasgow Southern Medical Society held on 28th November, 1907.

There are, however, some other points relating to the anti-diphtheritic serum not so generally appreciated. As regards its therapeutic value, different samples present great constancy. No maker's serum, however, produces quite uniform clinical results when used therapeutically. Between the chief different makers, taken over a series of years, there does not seem to be much difference, but between different samples of the same maker there has been frequently great variation. At times the serum has seemed an almost perfect remedy, and at other times next door to useless. Sometimes the therapeutic results have been so perfect that it seemed possible that the death-rate from diphtheria should not exceed 5 or 6 per cent; at other times with certain consignments of serum no beneficial result could be observed. These variations do not appear to be due to alteration in the type of the disease so much as to differences in the bodies contained in different consignments of the serum. It would seem that the poisons produced by the organism of diphtheria call forth a different response in man and in the horse. Though the chief poison of the diphtheria organism is easily neutralised by the specific antitoxin, yet there are probably a number of other poisons which act more powerfully on man, and for which the horse serum consequently contains very variable amounts of antibody. It must also be evident that when the potency of a serum is estimated by tests on one of the lower animals (in this case the guinea-pig), the therapeutic efficacy on man can hardly be expected to bear a constant relationship to the estimated value of the serum. This matter was brought before the International Congress of Demography last summer by Professor Krauss, of Vienna, and a committee appointed to consider it. The alteration in the type of the disease, on the other hand, cannot be wholly neglected. It is well known that diseases vary in type from time to time, and in consequence it seems probable that if the full advantage is to be obtained from the serum treatment of diphtheria, the serum should so far as possible be obtained by the use of cultures taken from cases as near as possible to the type specially predominant at the moment. The actual facts upon which these opinions are specially based are to some extent contained in the letters written two to four years ago printed at the end of this paper.

With regard to plague serum, there has not been any great experience since the last papers were published, but that little, combined with some experimental work, goes to verify the accuracy of the former conclusions, which are practically identical with those reprinted recently as the result of observations in India. Plague serum is of no use at all in any malignant case of plague; in fact if a person is likely to die in four or five days illness, I would be inclined to deny it any efficacy, but, if it appears that the resistance of the patient is likely to be sufficient to tide him over this period a cure would seem to be within the range of early treatment. The serum has some peculiarities which mark it off from the anti-diphtheritic serum. It is not so markedly antitoxic, but is chiefly bactericidal. Further, the anti-bacillary component passes with great difficulty through the lymphatic glands. Both by observations on man and on the rabbit it seems to be proved that not until three days after the hypodermic injection of the remedy are its full clinical effects to be expected, so that consequently it is necessary to inject large quantities (250 cubic centimetres) intravenously if the full benefit is to be obtained. In milder cases, however, the subcutaneous method was found sufficient if the serum was injected under the skin into the region of which the lymphatic vessels drain directly into the plague-infected bubo. This delay of absorption is a feature which, so far as I know, has not been pointed out, and as the phenomenon suggests the distribution of the remedy to the affected parts by living white cells, it has some interest from the point of view of immunity. To give the complete evidence on which this opinion is based is not possible in this paper, but one of the cases affords so complete a picture of the phenomenon that it is quoted here.

"N. T., female, æt. 10, admitted on 11th September, 1901, in the evening. Illness began on day prior to admission with severe headache and malaise. At the same time the right groin was complained of as being painful and tender, but the patient could walk. The temperature on admission was 102·8° F. The pulse numbered 128 per minute, and the respirations 26. The face was heavy looking and flushed. The pupils of the eyes were contracted and the conjunctivæ suffused. The lips were dry, as also the tongue, which was furred. A mottling on the skin was noted over the abdomen, flanks, arms, and legs. The spleen was slightly enlarged. A bubo, consisting of several enlarged lymphatic glands, was noted in the right groin. It was very tender. A smaller similar bubo also existed in the left groin. A plague pustule was observed on the left iliac crest, with a red areola of about three quarters of an inch in diameter. In the front of the left thigh a second though very small pustule was also noted. In the former, degenerated plague bacilli were observed and a typical growth obtained on culture. On the morning of 12th September the patient was somewhat worse. The buboes in both groins had advanced, but that in the right side was much the larger. Forty c.c. of Yersin's serum were injected into the subcutaneous tissue of the anterior aspect of the right thigh, and an additional 100 c.c. into the areolar tissue of the abdominal wall. Next day little change was seen in the patient's condition, but the bubo on the right side was much smaller and less tender to touch. The pustule over the left iliac crest was healing, but the one on the right leg developing. The latter was opened and dressed with a moist carbolic (1 in 40) dressing. On 14th September, the temperature was beginning to fall, but though the bubo in the right groin had greatly diminished and was no longer tender, that in the left had advanced in size. The glands above Poupart's ligament also now were involved. A good deal of œdema was present, and the skin was erythematous for an area of at least three inches in diameter. Forty c.c. of serum were injected into the subcutaneous tissue of the anterior aspect of the left thigh, and another 100 c.c. into the wall of the abdomen.

"By the evening, *i.e.*, nine hours afterwards, the œdema round the bubo had almost disappeared, and the glands above Poupart's ligament could be palpated without resistance. A gland behind the ramus of left jaw, however, had been felt for the first time in the early afternoon. It was painful to the touch, and resembled the first stage of an ordinary plague bubo. This bubo continued developing most of the next day, and then began to subside spontaneously.

"From this point improvement continued, and convalescence, though interrupted by a rather severe serum fever, was very good."

In addition to these two sera a great many others have been tried. During the small-pox epidemics the serum of vaccinated heifers was used in a considerable number of severe cases. The results of this were published at the time in the *Lancet*, and, as far as subcutaneous injection of the serum was concerned, were wholly negative. During the next epidemic, however, that of 1903-1904, it was determined by the late Professor R. S. Thomson to use the remedy intravenously in severe cases. As the amount of serum to be injected was considerable, only hæmorrhagic cases were selected for treatment. It was found that about 30 oz. of heifer serum could be injected into a vein without any deleterious result, the serum being allowed to flow in slowly by its own weight. The first patient on which it was tried was considered a typically hæmorrhagic case of small-pox by Professor Thomson and by other physicians who had had very considerable experience in the disease. The patient was on the fifth day of illness, with almost no appearance of the true eruption. The day after the injection the patient was immensely better, and a very copious true eruption had appeared all over his body. This eruption hardly continued to develop more than a couple of days, and dried up in the early vesicular stage. It is difficult to believe that the serum had not a marked influence in aborting this case, but it must be classed among the accidents of serum treatment, as in four other hæmorrhagic cases treated subsequently no effect at all was observed.

It may be noted here that the heifer serum used in these and in the previous cases was very much less toxic to the human subject than that of the horse, a rash following its use in only one case, and articular pains, &c., being wholly absent.

The results obtained with anti-streptococcic serum have not, on the whole, been very encouraging, and its use is at present given up. It was tried in a long series of septic scarlet cases, and also for some time in the puerperal fever wards. With scarlet fever in a few cases the effect seemed very beneficial. In some under my own personal care ulcerating throats of formidable appearance healed in a manner seldom seen in cases not so treated, but, on the other hand, nothing like constancy could be observed. Other throats clinically identical, and of which the bacterial flora seemed essentially the same, showed no sign of improvement, and my own experience in the use of this remedy was the same as that of the other members of the staff, which was described at the time in a paper by Dr. Campbell Marshall. In puerperal fever the remedy seemed even less efficacious, and its use was abandoned. Later on, however, when it became evident that the intravenous administration of serum was in some instances a more potent method, the treatment of puerperal fever by this means was attempted. The results again were wholly negative, and on one occasion it even seemed that the administration did harm.

Of the other sera tried, anti-coli, anti-typhoid, and anti-staphylococcus may be mentioned. In all these instances specific effects were absent. The anti-coli serum was introduced into the peritoneal cavity of some patients after operation for perforation in enteric fever in the hope that the subsequent peritonitis might be avoided, but without any apparent effect. One case treated by the anti-staphylococcus serum, however, deserves mention as throwing some light on the nature of the fortunate accidents in serum therapy. The patient on whom it was tried was admitted certified enteric fever. The illness had begun with head symptoms, which had, however, soon passed off, the patient continuing thereafter to exhibit daily rigors, with a temperature ranging from 102° F. to 104° F. On admission, nothing was discoverable even after the most careful examination. Head symptoms were quite absent, and the heart, lungs, and abdomen were free from any recognisable lesion. It was considered probable that a deep-seated abscess existed, and the case was thought a favourable one on which to try the remedy. After the first injection of 10 c.c. subcutaneously, the patient passed two days without a rigor; after a second injection, twenty-four hours passed without a rigor; while a third injection two days later produced no effect. For some days more the patient remained in the same condition. A swelling then began to appear at the base of the right ear posterior to the ramus of the jaw. The surgeon, Dr. Dalziel, after a consultation, operated. A localised periostitis of the petrous bone was found, and drained. After this no further rigor occurred, and the patient made an uninterrupted recovery.

Cultures made at the time of the operation gave a pure growth of the bacillus coli communis. In this case we have, therefore, an example of a non-specific therapeutic action.

The meaning of such accidental cures is not quite clear. In many cases they are probably merely coincidences, but the whole can hardly be explained in this way. It is more probable that these sera contain some easily destructible substances, the chemistry of which is at present unknown, and whose presence or absence can consequently not be tested. On the other hand, it is possible that the serum injected has, as Metchnikoff suggests, sometimes a stimulant action which calls forth fresh powers of resistance on the part of the patient. Something of the nature of an opsonin may also be contained in certain samples of serum, which may afford the patient a certain amount of aid in meeting the bacterial invasion.

As this note simply refers to the experience of Belvidere Hospital, it has been thought well to append a list of the papers published by members of the staff, in which the observations are detailed.

Appendix containing Letters on the Variation of Potency in Antidiphtheritic Serum.

15th November, 1904.

DEAR SIRS,—I return by this post the remainder of the last batch of serum which you sent. Contrary to our almost uniform experience, this has had almost no therapeutic effect at all, even mild cases showing no immediate improvement and the sera making little progress. One relapsed yesterday with a new attack of severe diphtheria, although 27,000 units were administered ten days ago. This is so exceptional, and the general want of effect produced by this consignment so marked, that I am led to believe that it has undergone some change or deterioration.—I am, Yours truly,

JOHN BROWNLEE.

Messrs. —— ——

25th November, 1904.

John Brownlee, Esq., M.D.,
City of Glasgow Fever Hospital, Glasgow.

Dear Sir,—With further reference to your favour of 15th November, respecting antidiphtheria serum, we beg to say that the supplies returned by you were promptly placed in the hands of Dr. ——, who has examined it, and we attach hereto his report. In the circumstances, we are unable to make any suggestions as to the cause of the results you observed, and shall be glad, if you have any theories upon the subject yourself, to have you make us acquainted with them. Of course, a large number of bulbs from this batch have been distributed in other quarters, and we have not received a single complaint, all of which appears to point to some peculiar conditions, or, perhaps, idiosyncrasy.

Thanking you in anticipation of your further advices.—We remain, Very truly yours,

—— ——

24th November, 1904.

Dear Sirs,—I have examined the bulbs of serum which you forwarded to me as having been returned from the Belvidere Fever Hospital, bearing certificates dated :—

Batch No. 72, - - -	1st July, 1904.
Batch No. 74, - - -	24th August, 1904.

No. 72 is still sterile and contains 425 antitoxin units per c.c. as certified.

Batch 74 is also sterile and contains 450 antitoxin units per c.c. at certified.—Yours sincerely,

—— ——

1st December, 1904.

Dear Sirs,—I have in hand your note, for which I beg to thank you. I am not surprised that on examination the samples of serum prove to have full strength. On a former occasion a consignment of serum which gave very unsatisfactory clinical results was also found to contain the normal amount of antitoxin. As your Mr. —— knows, I have for long suspected that a large part of the real curative value of the serum depends on some principle acting independently and in addition to the neutralising action of the antitoxin on the poison. About the relative failure in action there is no doubt. None of the cases have made the convalescence to which we are now accustomed. In all the cachexia has remained to a degree which recalls pre-antitoxin days; and in several patients conditions such as severe ulceration of the mouth are yet present. As I told you, in one case there was a very marked relapse, and this patient, who then received 12,000 units of other serum, is at the present moment the one who has made the best convalescence. I do not think that there was any peculiarity about the diphtheria. How to ascertain if my surmise as to the presence of some other principle than the antitoxin in the serum be correct or not is not clear. I have made a few experiments without definite result.—I am, Yours truly,

JOHN BROWNLEE.

Messrs. —— ——

3rd December, 1904.

JOHN BROWNLEE, Esq., M.D.,
City of Glasgow Fever Hospital, Glasgow.

DEAR SIR,—We thank you very much for your esteemed favour of the 1st inst., with regard to antidiphtheria serum, contents of which we have noted with much interest. We are taking the liberty of sending copies of this correspondence to our Biological Department at ———, as we feel sure that they will be interested in the suggestion you make as to the failure of this particular batch of antitoxin to produce the usual results under your administration. The fact that the case which relapsed, and then received 12,000 of another make of serum, has made the best convalesence, lends support to your suggestion that there was some peculiarity associated with the serum rather than with the patients or the particular type of the disease. Upon the other hand, the fact remains that the serum is always tested and standardised in connection with a true diphtheritic toxin, and if it neutralises this toxin in the guinea-pig we cannot see why it would fail to do the same in a human being. Moreover, as previously pointed out, no other complaints have reached us a result of the distribution of a large number of doses from the same batch, and in the present state of serum therapeutics it is hardly conceivable that an unsatisfactory batch would be employed over a large area without attracting attention in more than one quarter.

We shall be much interested in what our people in ——— say upon this subject, and sincerely trust that eventually something definite may be ascertained in connection therewith. Particulars of any fresh information that you may at any time be able to give, will be very much appreciated.—We remain, Very truly yours,

—— ——

4th August 1906.

DEAR SIRS,—At the present moment we are finding no sera for diphtheria really satisfactory, though I have no special fault to find with yours against any other. There is at present a change in the type of the disease and probably the organism. We have had more cases of paralysis following diphtheria in the last six months than in the preceding five years. I would suggest that you obtain strains of the organism from the localities to which you supply serum. That my experience is not solitary I see by a note in the *B. M. J.* of two weeks ago.—I am, Yours truly,

JOHN BROWNLEE.

Messrs. —— ——

4th September, 1906.

DR. JOHN BROWNLEE,
Fever Hospital, Belvidere, Glasgow.

DEAR SIR,

Re ANTIDIPHTHERIA SERUM.

With reference to your recent letter, we beg to say that we communicated the facts to our home laboratory, and their reply is just to hand. They write as follows:—

"The condition described is interesting; it may be of importance. Time and again it has occurred to us from this or that observation that it might be desirable to use a number of strains of diphtheria in our cultures, or different culture media, but we have hesitated to tamper with a procedure that apparently was so satisfactory as our production of antidiphtheria serum.

"Some suggestive work was done some two years ago by Dr. Vaughan, of the University of Michigan, wherein he sought to show that there was several toxins produced by the diphtheria germ, in particular did he believe that a certain toxin was not soluble in our culture media, and, as we filter off the diphtheria germs, was therefore not present in the toxin used for immunising our horses. This particular toxin we believe to be largely responsible for the post-diphtheria paralysis. We did a little work trying to confirm these results, but with no satisfactory conclusion.

"Until we have further looked into the matter we do not believe that we are warranted in making any change in our production of antitoxin. In the meantime, however, we shall be glad to have you keep us informed as to Dr. Brownlee's observations, and those of any other of your physicians bearing on this question."

The above is what the head of our Biological Board has written us, and it almost appears to us as if we had failed to make our meaning clear in respect of our opinion that the cause of the paralytic symptoms was not in any deficiency of the serum, but was due to some change in the character of the disease itself.

We should be glad if you could keep track of this matter, and in particular if you would be kind enough to make a note of the finishing number of those bulbs of serum which appear to you to be connected with any special feature in your cases, and from this we shall be able to trace the history of the serum, which may possibly give us some information on the subject.

Thanking you for your kind interest in this matter, and awaiting your comments.—We remain, Very truly yours,

——— ———

Papers on Serotherapy by members of the Belvidere Hospital Staff from the commencement of the treatment till the present day.

1. "Notes on cases of diphtheria treated with antitoxin," by E. L. Marsh, M.B. (*Glas. Med. Journ.*, March, 1895).
2. "Further notes on cases of diphtheria treated with antitoxin," by E. L. Marsh, M.B. (*Glas. Med. Journ.*, May, 1895).
3. "Diphtheria treated with antitoxin: Statistical statement of the results obtained in the City of Glasgow Fever Hospital, Belvidere," by E. L. Marsh, M.B. (*Glas. Med. Journ.*, May, 1896).
4. "Vaccinal immunity in relation to the serum treatment of small-pox, with a record of cases," by R. S. Thomson, M.B., B.Sc., and E. L. Marsh, M.B., D.P.H. (*Scot. Med. and Surg. Journ.*, August, 1897).
5. "Antistreptococcus serum: its application in the treatment of scarlatina anginosa," by Campbell S. Marshall, M.D., D.P.H. (*Glas. Hosp. Rep.*, 1899).
6. "An analytical account of fifty-seven cases of puerperal infection," by Edgar Macharg, M.D. (*Brit. Med. Journ.*, 17th February, 1900).
7. "The sero-therapeutics of plague," by John Brownlee, M.D. (*Lancet*, 17th August, 1901).
8. "On the treatment of diphtheria by the intravenous administration of antidiphtheric serum," by D. Louis Cairns, M.D. (*Lancet*, 20th December, 1902).
9. "The antitoxin treatment of diphtheria in the City of Glasgow Fever Hospital, Belvidere, during six and a half years," by John Brownlee, M.D. (*Glas. Med. Journ.*, April, 1902).
10. "Further observations on the treatment of small-pox by the serum of vaccinated heifers," by R. S. Thomson, M.D., D.Sc., and John Brownlee, M.D. (*Lancet*, 4th April, 1903).
11 "On the treatment of bubonic plague by Yersin's serum, with observations on its mode of action," by D. L. Cairns, M.D. (*Lancet*, 19th May, 1903).
12. "On the supersensitation of persons suffering from diphtheria by repeated injections of horse serum," by J. R. Currie, M.A., M.B. (*Journal of Hygiene*, 1907).
13. "Examples of the immediate and of the accelerated reactions following two injections of horse antidiphtheric serum," by J. R. Currie, M.A., M.B. (*Journal of Hygiene*, 1907).
14. "The serum disease in man after single and repeated doses," by J. R. Currie, M.A., M.B. (*Glas. Med. Journ.*, May, 1908).
15. "Abnormal reactions to horse serum in the serum treatment of cerebrospinal fever," by J. R. Currie, M.A., M.B. (*Journal of Hygiene*, 1908).

AGGLUTINATION REACTIONS.

BY ANDREW LOVE, M.D.,
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IT is now well known that the agglutination reaction which results from the contact of serum from a person suffering from an attack of typhoid fever with a young culture of the typhoid bacillus may result from the contact of sera taken from persons suffering from diseases other than typhoid, and the question naturally presents itself whether a similar agglutinative power is possessed by the serum of a person suffering from typhus fever. The observations to be submitted were instituted with the object of throwing some light on this point.

The serum employed was obtained from blisters produced by the action of blistering tissue, and the epidermis, previous to the removal of the serum by Pasteur pipettes, was carefully sterilised. When not used immediately, the pipettes were sealed at both ends and preserved for future use. The observations on agglutination were carried out on the hanging drop, and in each experiment three degrees of dilution were employed, viz., 1 in 10, 1 in 20, and 1 in 60.

Experiments were carried out with serum taken from 55 cases of typhus. In 15 the observations were taken immediately after the collection of the serum, but in the others the age of the serum varied considerably, being in some cases at least six months old, a fact which may account for want of uniformity in result, as there seems little doubt that serum loses, to some extent at least, its agglutinative properties when kept too long a time.

The appended table gives details of the observations made upon serum taken at different stages of the illness.

A complete reaction is indicated by the positive sign +, whilst the negative sign — indicates that no reaction has taken place. Partial or incomplete reactions are indicated by the sign + *p* (partial).

The cases examined were all undoubtedly typhus, and in 6 the disease ended fatally. We will first consider the reaction of serum taken from patients after the crisis.

In the 15 cases where the serum was examined within a few hours after withdrawal from the blister, a positive reaction was obtained in 12 within a two hours' time limit, with a dilution of 1 in 10, and in 8 of these the reaction was complete in forty minutes. With a 1 in 20 dilution complete agglutination was observed in 3 of these 15 cases within two hours, whilst in the others, a few clumps only—partial agglutination—were observed. In no case was there a complete positive reaction with a 1 in 60 dilution in the space of twenty-four hours.

In the remaining 40 cases—the serum from which was used after a period varying mostly up to six months, and in a few instances up to eighteen months—no agglutination was observed with a 1 in 60 dilution in twelve hours, whilst in twenty-four hours there was no appearance of clumping whatever with higher dilutions.

Serum taken during the acute phase of the disease was not found so active as that taken after the crisis; in no case was a complete positive reaction obtained even after twelve hours' contact with the strongest dilution (1 in 10).

From the point of view of a differential diagnosis between typhus and enteric fever, the agglutination test appears to be of some value, inasmuch as in typhus fever it is only with very low dilutions (1 in 10) that any striking positive result is obtained within a reasonable time.

Bearing in mind that serum may manifest agglutinating properties when taken from a patient many years after he has passed through an attack of typhoid fever, it might be objected that the patients above referred to, whose serum gave a positive reaction, might have passed through an attack of this disease within a comparatively recent date, but careful enquiry made it possible to completely exclude this source of error, and the reactions, so far as they go, may be regarded as entirely dependent upon the action of the uncontaminated typhus serum.

In about a dozen cases the bacillus coli communis was substituted for that of typhoid fever. The results were very similar—that is to say, with a 1 in 10 dilution complete agglutination occurred within two hours, whilst with higher dilutions (1 in 20 and 1 in 60) a very much longer time was necessary for even a partial agglutination to occur.

REFERENCES.

Biggs and Park, *American Journal of the Medical Sciences*, February, 1897.

Colville, *British Medical Journal*, 16th October, 1897.

TABLE OF AGGLUTINATIONS.

No.	Day of Illness.	Dilution, 1 in 10.	Time.	Dilution, 1 in 20.	Time.	Dilution, 1 in 60.	Time.
1	19	+	40 mins.	+	2 hrs.	—	24 hrs.
2	21	+	40 ,,	+	2 ,,	—	...
3	16	+	30 ,,	+ *p*	3½ ,,	—	...
4	21	+	30 ,,	+ *p*	24 ,,	—	...
5	17	+	30 ,,	+ *p*	24 ,,	—	...
6	24	+	30 ,,	—	24 ,,	—	...
7	38	+	2 hrs.	+ *p*	12 ,,	—	...
8	26	+	2 ,,	—	24 ,,	—	...
9	16	+	2 ,,	+ *p*	2 ,,	—	...
10	15	+	24 ,,	—	...	—	...
11	35	+ *p*	12 ,,	—	...	—	...
12	12	+ *p*	24 ,,	—	...	—	...
13	55	+ *p*	9 ,,	—	...	—	...
14	4	+ *p*	2 ,,	—	...	—	...
15	14	+	8 ,,	—	...	—	...
16	9	+ *p*	9 ,,	—	...	—	...
17	10	+ *p*	9 ,,	—	...	—	...
18	16	+ *p*	12 ,,	—	...	—	...
19	15	+ *p*	12 ,,	—	...	—	...
20	16	+ *p*	12 ,,	—	...	—	...
21	15	+ *p*	12 ,,	—	...	—	...
22	15	+	4 ,,	—	...	—	...
23	28	+ *p*	24 ,,	—	...	—	...
24	29	+ *p*	24 ,,	—	...	—	...
25	37	+ *p*	24 ,,	—	...	—	...
26	31	+	24 ,,	—	...	—	...
27	19	+ *p*	24 ,,	—	...	—	...
28	35	+ *p*	12 ,,	—	...	—	...
29	15	—	...	—	...	—	...
30	3	—	...	—	...	—	...
31	6	—	...	—	...	—	...
32	30	—	...	—	...	—	...
33	14	—	...	—	...	—	...
34	25	—	...	—	...	—	...
35	48	—	...	—	...	—	...
36	29	—	...	—	...	—	...
37	36	—	...	—	...	—	...
38	12	—	...	—	...	—	...
39	43	—	...	—	...	—	...
40	16	—	...	—	...	—	...
41	35	—	...	—	...	—	...
42	13	—	...	—	...	—	...
43	18	—	...	—	...	—	...
44	22	—	...	—	...	—	...
45	13	—	...	—	...	—	...
46	16	—	...	—	...	—	...
47	14	—	...	—	...	—	...
48	9	—	...	—	...	—	...
49	10	+ *p*	...	—	...	—	...
50	8	+ *p*	24 hrs.	—	...	—	...
51	9	+ *p*	24 ,,	—	...	—	...
52	9	+ *p*	24 ,,	—	...	—	...
53	13	+	30 mins.	+	2 hrs.	—	...
54	6	+	40 ,,	+	24 ,,	—	...
55	8	+	30 ,,	+	24 ,,	—	...

INFANTILE MORTALITY.

By H. E. JONES, M.B.

As touching on the question of infantile mortality, and, at the same time, interesting to the general practitioner who, from time to time, is called upon to write a death certificate for an infant whom he did not attend, but who, he is told, passed away after a few hours' illness, the following cases which have come under my observation during the last few weeks may be read with a certain amount of interest:—

Some weeks ago I was called one morning to attend the confinement of a lady who was pregnant with her twelfth child. On my arrival, twenty-five minutes after being summoned, I found the baby born, and to all appearance healthy. It weighed 6½ lb. On the evening of the following day I was told that the baby took well to the breast, but was cross and somewhat fretful, though otherwise apparently healthy. Finding the abdomen somewhat distended with gas, I made no further examination, concluding that that was the cause of the child being fretful. Without making any further examination I suggested that it might be given half a teaspoonful of whisky in a little hot water. This was done, with the result that it seemingly felt easier, and dropped over to sleep. Before morning the baby again became restless, and the nurse administered another half teaspoonful of spirits, which had again the desired effect of producing quiet.

At 6 A.M. the baby took a good drink from the breast, and thereafter dropped over to sleep. When it awoke at 8·30 it looked pale and sickly, and in about fifteen minutes afterwards vomited a small quantity of blood. I was immediately sent for, and on my arrival, about one hour later, found the child dead. This was the first death in the family.

Being unable to account for the symptoms followed by such a fatal issue, I requested permission to make a *post-mortem* examination. This being readily granted, Dr. Young Campbell and I exposed the parts, and found all the organs healthy except the lungs. These we found to be partly solid, partly spongy. The lower lobes were solid, dark red, and partly engorged with blood—somewhat liver-like—while the upper lobes were much lighter in colour, and more spongy. When placed in water each lung floated, but barely so, rolling over, as do all substances that are top-heavy, so that the lower lobes turned downwards. On separating the lower from the upper lobes we found that they immediately sank, while the others continued to float.

The inference drawn was that the lungs had never been properly inflated, and that this was the cause of death. Had I undressed the baby and made a more careful examination, I might have been able to have located the seat of the child's discomfort, although I question if I should have given an accurate diagnosis. Much less should I have been able to render any material aid.

Within a few weeks I was asked to see baby G., aged 6 months, who had never been a robust child. Some days previously he was allowed to sleep for a few hours in the afternoon in a room without a fire. Nothing unusual was observed as regards the child till about 11 P.M. that night, when he took a fit of crying, and looked so ill that I was sent for. When I saw the child, in about an hour and a half after the onset of the attack, he was very pale and ill-looking, perspiring much about the head, breathing rather quickly, and cried occasionally as if in pain. I suspected pneumonia, yet found the lungs were clear and the temperature subnormal. As I could find nothing to account for the illness, I made the provisional diagnosis of intestinal colic, and gave my opinion accordingly. I administered small quantities of whisky and water, and applied poultices to the abdomen. After waiting for an hour without observing any signs of improvement, I made another examination, and was not a little surprised to find that both lungs were full of moist râles, and the symptoms present were those of acute pneumonia. Death took place in about one hour afterwards, or in three and a half hours after the onset of the illness.

The lessons to be drawn are (1) that even in the case of a crying child we should always undress and make a careful examination; (2) that where we have difficulty in arriving at a diagnosis in the case of children, we should soon make another examination; and (3) that where possible we should make *post-mortem* examinations before granting a death certificate in all cases where we have any difficulty in making a satisfactory diagnosis.

CURRENT TOPICS.

THE UNIVERSITY AND MEDICAL TEACHING.—While the delay in making the appointment to the Chair of Clinical Medicine may have come as a surprise to some, the subject of changes in medical teaching in Glasgow has been for a considerable time matter for conversation. Put briefly, it has been felt by many that it would be of mutual benefit to the Royal Infirmary and to the Glasgow medical school if the former institution were admitted to a larger share of clinical teaching in the University. There is no doubt that by distributing the students between the Western and the Royal Infirmaries, and, still more, by including the Victoria Infirmary as a teaching hospital, the students would be able to come into closer contact with the cases.

Two difficulties at present stand in the way of the Royal and Victoria Infirmaries, viz., their distance from the University, and, the fact that, while the physicians and surgeons on their respective staffs are recognised by ordinance as clinical teachers whose courses qualify for graduation, none of them (with the exception of the Queen Margaret College lecturers in medicine and surgery at the Royal Infirmary) hold University office or examine candidates for the degrees.

To overcome these difficulties, proposals are being considered by the University Court in conjunction with representatives from the Boards of Managers of the Royal and Western Infirmaries.

While nothing definite has been decided upon, we understand that it has been suggested that the new Professor of Clinical Medicine (and perhaps in time the Professor of Clinical Surgery also) should give his instruction in the wards of the Royal Infirmary; that other physicians and surgeons of the infirmaries be appointed University Lecturers in Clinical Medicine and Clinical Surgery respectively; that, to ensure the better distribution of students for bedside instruction, no clinical class held by any professor or lecturer shall exceed a fixed number of students; and that the geographical difficulty be minimised by arranging that no lecture which clinical students during their final year would require to attend in the University buildings be given before

12 noon. The women students in particular, who are not admitted to the Western Infirmary, would thus have the benefit of professorial instruction at the Royal, and their teachers would have a place among the examiners for degrees.

The above spells reform. Whether all or part of it will come to fruition no one can say at present; but the elements of an improved clinical school are there, and it is to be hoped that the scheme will not be dismissed hastily, but will receive the disinterested consideration which it undoubtedly merits.

PHYSICIANS AND SURGEONS TO THE KING.—It is notified in a recent issue of the *London Gazette* that the King has made the following appointments:—

Mr. David W. Finlay, M.D., F.R.C.P.Lond., Professor of the Practice of Medicine in the University of Aberdeen, to be one of the Honorary Physicians to His Majesty in Scotland, in the room of Sir Thomas M'Call Anderson, M.D., deceased.

Sir William Macewen, F.R.S., M.D., Regius Professor of Surgery in the University of Glasgow, to be one of the Honorary Surgeons to His Majesty in Scotland, in the room of Sir Patrick Heron Watson, M.D., deceased.

Mr. James Little, M.D., Regius Professor of Physic in the University of Dublin, to be one of the Honorary Physicians to His Majesty in Ireland, in the room of Sir John Thomas Banks, K.C.B., M.D., deceased.

Mr. William Black Alexander to be Surgeon Apothecary to His Majesty's Household at Holyrood Palace.

ROYAL INFIRMARY POST-GRADUATE CLASSES.—The syllabus for the autumn course has just been issued. The course lasts throughout the present month, and embraces all the subjects which are likely to be of use to graduates. As before, the hours and dates of meetings are arranged so as to avoid overlapping, and the time table appended to the syllabus gives at a glance information to those desirous of attending the various classes. The attendance in the past has shown that the courses are much appreciated, and we have no doubt that, this year, they will be as much sought after as on former occasions. Further information may be obtained from Dr. Thom, Superintendent of the Infirmary.

THE MEDICAL SERVICES.—At the examination for commissions in the Indian Medical Service, held 27th July-1st August, forty-one candidates presented themselves for twenty vacancies. Among those who were successful, two

Glasgow graduates, viz., Archibald Campbell Munro, M.B., Ch.B., and Alister Argyle Campbell M'Neill, M.B., Ch.B., obtained second and ninth places with 3,643 and 3,330 marks respectively out of an aggregate of 5,100. Mr. Munro gained 191 marks less than the highest score.

At the examination for the Royal Army Medical Corps, A. N. R. M'Neill, M.B., Ch.B. Glasg., was bracketed for sixteenth place with 530 marks. There were twenty-eight vacancies, for which forty-eight candidates entered. The top score was 640 marks.

TERRITORIAL FORCE: R.A.M.C. (T.).—Under the new order of things, the R.A.M.C. (Vols.) Glasgow Companies have been broken up and reorganised as Ambulance units in the Lowland Division of the Territorial Force. In this division there is one Mounted Brigade Field Ambulance and three Field Ambulances for service with infantry brigades. The Mounted Brigade Ambulance, under the command of Major R. T. Halliday, has its headquarters in Glasgow. The officers attached are Captains Hugh Wright Thomson, James Bruce, R. Yuill Anderson, and Farquhar Gracie, and Lieutenant R. B. Carslaw. Of the three Field Ambulances, Nos. 1 and 2 have their headquarters in Glasgow. No. 1 is under the command of Lieutenant-Colonel W. F. Somerville, and the officers attached are Captains G. H. Edington, Archibald Young, James Walker, Wm. Bryce, Cochrane Murray, Brownlow Riddell, and J. Leitch; Lieutenant Archibald Jubb; and Quartermaster and Honorary-Captain J. Kenny. No. 2 is under the command of Lieutenant-Colonel A. D. Moffat, and officers attached are Captains P. F. Shaw, John M'Kie, Matthew Dunning, and W. A. Burns; Lieutenants J. Aitken, J. K. Patrick, D. Shannon, and A. M. Watson; and Quartermaster and Honorary-Captain W. Lee. No. 3 Field Ambulance has its headquarters in Edinburgh. Major Macdonald, commanding officer, has, we regret to say, just died.

R.A.M.C. (T.) Camp at Lanark.—All four Ambulances had a combined fifteen-day camp this year (18th July-1st August). The presumable motive for this arrangement was to secure maximum efficiency. This was all the more necessary, because the new units had had a very short drill season this year, on account of the disturbance inseparable from a change of organisation. Lieutenant-Colonel Somerville was in command, with Major Macdougall, R.A.M.C., as Adjutant. The other commanding officers present with their units were Lieutenant-Colonel Moffat, Major Halliday, and Captain Ross (Edinburgh).

Permission had been obtained to encamp on the racecourse at Lanark. This made an ideal camping ground, as, in addition to being well situated, there was ample space for training purposes, both on the course and adjacent moor. The weather was favourable, and the health of the troops was excellent.

During the early part of the time stretcher and waggon drill occupied a great deal of attention, but after this had been grasped, more time was devoted to other parts of the training, such as pitching F.A. encampments, searching for wounded concealed at a distance, and transporting them by waggon and stretcher to the encampment. In the operating tent everything was prepared as for use. Field panniers were unpacked, instruments sterilised, operating table rigged up, &c. The details were so arranged that each unit had different duties on successive days, and those who stayed on for the second week were sensible of the great advantage they derived. This advantage was felt all the more because the drills and exercises have been recently very much changed, and the officers and men had barely had time to become familiar with them in the short space of time available before camp.

A new feature in this year's camp was the large number of horses, both riding and transport, and recruits were put through a very thorough course of riding-school by the A.S.C. instructor attached to the units.

During the first week there were three visits of inspection, made respectively by Colonel Babtie, V.C., Inspector of Army Medical Services; General Kelham, C.B., Commanding Lowland Division; and General Babington, Commanding the Mounted Brigade.

During the first week there were in camp 25 officers and 380 of other ranks; during the second week, 16 officers and 230 of other ranks.

The work was undeniably heavy, but all took a keen and intelligent interest in it, and the general temper of those in the camp has been a strong and unmistakable answer to the numerous jeremiads on the Territorial scheme.

Sir George Beatson is to be congratulated on the successful result of his labours in organising the medical department of the Lowland Division.

BAILLIE'S INSTITUTION.—We have received the *Handbook* to this free public reference library, founded in 1863 by George Baillie. Born in Paisley in 1784, he was in 1802 apprenticed to a lawyer in Glasgow, and nine years later was admitted a member of the Faculty of Procurators. He died in 1873, in 37 Dalhousie Street, and lies buried in a sepulchre close to the south door of the Cathedral.

In 1863 Baillie transferred to the office-bearers of the Faculty of Procurators in Glasgow, as trustees, the sum of eighteen thousand pounds as a first step towards the foundation of an "institution intended for the benefit of my townsmen." He appointed the sum to accumulate during a term of twenty-one years. On the expiry of that period the funds were to be applied to the erection and endowment of an educational institution in Glasgow, having for its object (1) to aid the self-culture of the operative classes by furnishing them with suitable accommodation for reading useful and interesting books, in apartments attached to one or more free public libraries provided for them; and (2) to afford to the children of these classes the means of unsectarian, moral and intellectual instruction, and industrial training in one or more schools and school grounds, either gratuitously or for such small consideration in the form of school fees as the trustees may think advisable.

Mr. Baillie calculated that the funds would amount to about £46,000, but in 1884 the sum had just doubled itself, and, as the Education Act was then in full operation, the trustees, exercising their discretionary powers, confined themselves to the formation of a free public reference library. The library was originally (1887) housed in 48 Miller Street, but in 1903 it was removed to its present home, 153 West Regent Street. This building was one of the first churches erected in Glasgow after the events of 1843.

The collection numbered originally about 4,000 books and pamphlets; there are now 22,500 volumes in the library. The aim of the governors is to make the collection of books catholic and proportionate, and, in addition to published volumes, a large number of periodicals are taken in at the library.

The *Handbook* has as a frontispiece a representation of Mossman's bust of the founder, and on the last page is a reproduction of his bookplate with its motto, "Quid clarius astris."

REVIEWS.

Abdominal Tuberculosis. By A. ERNEST MAYLARD, M.B., B.S. Lond. London: J. & A. Churchill. 1908.

MR. MAYLARD is already well known by his published writings as a close observer of his cases, a careful student of the works of others, and as a writer who possesses and uses the power of systematising the information which he wishes to impart. It is, therefore, with considerable interest that we turn to his latest volume.

In the opening chapter he raises the question as to the primary source of the bacilli which come to infect the human system. After dismissing the bovine supply as being accountable for but a small proportion of cases, he concludes that "in the human being must be found the chief nidus from which the dissemination emanates." He quotes, however, from very recent literature opinions which do not support the summary dismissal of bovine tubercle as a factor in the causation of tuberculosis in man.

By the term "abdominal tuberculosis" the writer means to signify disease of a tubercular nature situated within the abdominal cavity. But in practice it is found that the principal seats of disease are the intestinal canal and the female pelvic organs. In dealing with the subject, therefore, he has planned to consider the parts most frequently the source of abdominal symptoms, and from them to pass on to the various extensions and complications arising with the advance of the disease.

Tuberculosis of the alimentary canal is taken up systematically, from stomach to colon. In the chapter on the stomach the author describes the various manifestations of tuberculosis found in this organ, and in the concluding portion of the chapter considers the question of tuberculous infection of a pre-existing chronic ulcer. The chapter is followed by a list of the works referred to in the text. A similar arrangement is followed in considering disease of the duodenum.

As might be expected, the subject of tuberculous disease of the small intestine occupies a considerable space. The étiology, pathology, symptoms, &c., occupy a chapter, and in the succeeding four chapters the results of ulceration are dealt with. Of these results we may take the occurrence of fistula on to the surface of the body. This is carefully described, and the lines of treatment indicated are eminently sound. Ileo-cæcal tuberculosis is also very fully considered. Then follows an account of the tubercular lesions of various viscera—liver, spleen, pancreas, and generative organs. The author concludes his work with accounts of tubercular peritonitis and tuberculosis of the omentum.

The medical treatment of tuberculosis forms the subject of a chapter by Dr. W. K. Hunter. After dismissing antiseptics, serums are considered, and he shows that we cannot, as yet, recommend this method with any certainty of a beneficial result. He then, after describing and drawing attention to the limitations of the vaccine treatment of Wright and his followers, sketches the ideally healthy method of living. The chapter closes with the treatment of special symptoms and remarks on prophylaxis.

Prefixed to the volume are a table of contents, a list of illustrations, and *précis* of the cases which are described in the various chapters. These lists are very helpful to the reader in turning up the particular subject in which he may at the time happen to be interested.

This book enhances the reputation of its author. It is written without any evidences of undue haste, the generalisations are always moderate, the cases described are given with attention to detail, and the author has spared no pains in procuring photographs of illustrative specimens. The work is one which all may read with benefit, and to which they will turn afterwards for reference.

Gynecology and Abdominal Surgery. Edited by HOWARD A. KELLY, M.D., F.R.C.S. (Hon. Ed.), and CHARLES P. NOBLE, M.D. Vol. I. London: W. B. Saunders Company. 1907.

"THIS work is the first in which the attempt has been made to cover both the fields of gynecology and abdominal surgery." Thus do the authors briefly express their aim.

In this volume of the work gynæcological subjects predominate, *e.g.*, operations on the perinæum, vagina, and cervix, curettage, hysterectomy, myomectomy, removal of appendages, &c. There are, however, chapters on diseases of the bladder and urethra, cœliotomy, and bacteriology, which appeal more directly to the general surgeon; while, to meet the needs of the general practitioner, there is a lengthy chapter on medical gynæcology.

Dr. Kelly devotes special attention to modern technique. In this section methods of sterilisation are described, and illustrations of apparatus are given.

The pathology of the reproductive organs occupies a long chapter from the pen of Dr. Elizabeth Hurdon. The text is illustrated by many figures of both macro- and microscopic specimens.

Plastic operations are described lucidly by Dr. Noble, who also contributes chapters on cœliotomy; and Dr. Hunner deals with diseases of the bladder and urethra. Dr. Kelly contributes chapters on vesical fistulæ, vaginal drainage, and conservative operations on the ovaries and tubes.

The volume contains a wealth of information, and the various chapters are beautifully illustrated. In addition, there is a considerable bibliography.

At the present time the general surgeon not infrequently finds that when he has opened an abdomen he is face to face with a gynæcological condition: and the gynæcologist is also in the same position with regard to a surgical lesion. It is essential, therefore, that all who practise abdominal surgery should be prepared for anything that they may meet, and it is for this reason that the present work is likely to prove acceptable. There is no doubt that it deserves to do so.

Glandular Enlargement, and other Diseases of the Lymphatic System. By ARTHUR EDMUNDS, M.B. Oxford Medical Publications. London: Henry Frowde and Hodder & Stoughton. 1908.

GLANDULAR enlargements are, from their frequency, of great interest to all. In this volume of the Oxford Medical Publications the author considers the subject from a practical and a surgical standpoint. Those conditions alone are dealt with in which affections of the lymphatic vessels or glands constitute the essential feature of the disease.

The opening chapter is devoted to the general anatomy of the lymphatic vessels and glands, and anatomical facts and theories as to development are placed before the reader with admirable conciseness. The author next directs attention to the groups of glands amenable to local treatment. These groups are those of the head and neck, and upper and lower limbs. In speaking of the upper limb the author mentions a fact with which most surgeons are familiar, viz., the rarity of implication of the cubital gland in cases of sepsis of the hand and fore-arm. He omits, however, to mention its very frequent enlargement in tuberculosis occurring in its drainage-area. His description of the irregular arrangement of glands in the groin is accurate, and the advice with which he closes this chapter is worth remembering, viz., in all cases of enlargement of the glands in the groin the whole of the tributary area must be examined.

The subject of diagnosis of glandular enlargement and of the cause of such enlargement is next dealt with. The principles on which the author would found a diagnosis are sound, and his views are well expressed.

Pathological conditions affecting glands—a goodly array—are considered in a series of chapters. The list of conditions embraces, among others, erysipelas, acute adenitis, Still's disease, plague, syphilis, tubercle, and malignant disease.

The subject of lymphatic insufficiency is treated in an interesting way, and the vaccine treatment of tuberculous glands is put forth clearly, if briefly. Lymphadenoma, endothelioma, and lymphosarcoma are considered in some detail, and their clinical characters are set forth in a practical way.

The volume is excellently printed, and the text is illustrated by numerous plates.

Mr. Edmunds has given us a book which will be of great use to the practitioner, and which gathers into small space practically the sum of our knowledge of the subject.

Diseases of the Spinal Cord. By R. T. WILLIAMSON, M.D. Lond., F.R.C.P. With 183 Illustrations and 7 Plates. London: Henry Frowde and Hodder & Stoughton. 1908.

IT goes without saying that a work by Dr Williamson on diseases of the spinal cord is one that may be regarded as able and authoritative, but a few brief glances at the pages of the present volume suffice to show that even such high anticipations fail to do justice to the great merits of the book. It is quite plain that this has been a labour of love on the part of the author, and that it has been prepared for, if not in actual preparation, during a long series of years. As part of the evidence that this is the case, it may be mentioned that all the numerous illustrations except one are reproduced from the author's own drawings and photographs, or from microphotographs of his own sections; and we may add here that the illustrations constitute a very valuable and interesting part of the work.

Beginning with a section on the structure of the cord, Dr. Williamson proceeds to the subject of its general pathological histology, including degeneration of nerve cells, fibres, and tracts, and thereafter to the functions of the spinal cord, and the symptoms of spinal diseases. The fifth section is on examination by electricity, *x*-rays, and lumbar puncture. The sixth section deals with the diagnosis and localisation of diseases of the spinal cord under the headings of anatomical diagnosis, pathological diagnosis, unilateral lesions, transverse lesions, and clinical groups of spinal diseases. The clinical groups here referred to are four in number, and each of them has one of the four sections which follow devoted to it.

The first group includes diseases causing symptoms of a transverse lesion of the cord, such as acute inflammation, acute softening and abscess of the cord, diseases of the spinal column and membranes, hæmorrhage, caisson disease, and others. With regard to the interesting question of myelitis, we are glad to find Dr. Williamson so free from extremism. He distinguishes from true myelitis certain affections which are frequently included under that designation, viz., (1) compression "myelitis," and (2) syphilitic and tubercular "myelitis," the two latter of which have special characteristics. On the other hand, he admits that the term myelitis may be fairly applied, in the clinical sense, to (*a*) actual acute inflammation; (*b*) acute toxic degeneration; and (*c*) acute degeneration following arterial obstruction.

The second group of diseases giving rise to symptoms of a transverse lesion consists of those which are characterised by atrophic paralysis. Among these are the different varieties of anterior poliomyelitis, progressive muscular atrophy, amyotrophic lateral sclerosis, syringomyelia, and others.

The third group is characterised by spastic paralysis or paresis, and includes primary lateral sclerosis and disseminated sclerosis.

The fourth group includes diseases in which ataxy is a prominent symptom. Among these are tabes, Friedreich's disease, ataxic paraplegia, subacute degeneration of the spinal cord, pellagra, and changes in the cord in cases of severe anæmia, of diabetes, and of arteriosclerosis.

The eleventh section treats of spinal meningitis, external and internal, acute and chronic. Hypertrophic cervical pachymeningitis, and tuberculosis of the cord and its membranes are included here.

The next section is devoted to the clinical forms and pathological anatomy of spinal syphilis, and is illustrated by beautiful coloured plates, as well as by figures in the text. After this come traumatic affections of the spinal cord. The concluding section is an appendix on methods of pathological examination of the spinal cord, including removal of the cord from the body, hardening, and staining.

To Dr. Williamson and his publishers we offer our hearty thanks for this admirable volume.

Lessons on Massage. By MARGARET D. PALMER. Third Edition. London: Baillière, Tindall & Cox. 1907.

THE second edition of this book has been so recently reviewed by us that there remains little more to say than simply to note the issue of a new edition, which has been revised, and, in part, rewritten. But we would take the opportunity of complimenting the author on the success of her book, the demand for which has been so considerable that the second edition had to be twice reprinted; and now within five years there appears a third edition. This speaks well for the merits of the work.

Experimental Researches on Specific Therapeutics. By PROFESSOR PAUL EHRLICH, M.D., D.Sc.Oxon. The Harben Lectures for 1907 of the Royal Institute of Public Health. London: H. K. Lewis. 1908.

PROFESSOR EHRLICH'S great reputation as an epoch-making investigator in certain departments of scientific medicine will assure for this little volume a welcome of a very cordial kind, and we are greatly indebted to those who induced the distinguished author to give us these three lectures in their English form. Parts of the book must be somewhat tough reading, at least for those who are not already students of Professor Ehrlich's work, but this is in great measure due to the very intricate character of the subject.

The first lecture deals with the anchoring phenomena manifested by the various "parasito-tropic" substances which help the body to stem an invasion by "antigens;" the discussion includes the antitoxins, the bacteriolysins, and the opsonins. The second lecture deals with "atrepsy," and describes facts of a very remarkable kind which are observed in experiments with cobra venom, with trypanosomes, and with mouse cancers. The third lecture is devoted to chemotherapeutic studies on trypanosomes, including the "combinatory" method of treatment.

The whole volume furnishes us with a rich scientific feast. It ought to be not merely read through, but thoroughly mastered by all who are interested in scientific pathology or therapeutics.

Aids to Pathology. By HARRY CAMPBELL, M.D. London: Baillière, Tindall & Cox. 1908.

SMALL text-books on any subject, and more especially if that subject be large and important like pathology, are, as a rule, not to be commended. In this little book, however, the student will get a fairly reliable synopsis of the subject. In some sections, however, as, *e.g.*, that on the blood, the information is so scanty that we are afraid the student will not obtain an intelligent appreciation of the diseases of the blood and the blood-forming organs. The book concludes with a short and instructive account of the various processes and theories connected with that important and difficult subject, "Immunity."

Electric Ions and their Use in Medicine. By PROFESSOR STEPHANE LEDUC. Translated by R. W. MACKENNA, M.A., M.B., Ch.B. Edin. With an Appendix by the Translator. London: Rebman Limited. 1908.

DR. MACKENNA deserves our hearty thanks for giving us this monograph, not simply in English, but in such good English. The book is a small one, speaking from the point of view of bulk, but it contains a great deal of instruction. Ionic medication may, no doubt, be described as a variety of medical electricity, but in theory at anyrate it is pretty far removed from the more rough and ready forms of procedure which consist in the stimulation of nerves and muscles by galvanism and faradism for purposes of diagnosis or treatment. Those who wish to go into the subject should certainly take this opportunity of familiarising themselves with Professor Leduc's work. Indeed, if further observation shows that the claims put forward on behalf of the curative virtues of ionic treatment are well-founded, we are likely to witness an immense development in the application of this method of treatment.

Thirty-eighth Annual Report of the Operations of the Sanitary Department of the City of Glasgow for the Year ending 31st December, 1907. By PETER FYFE, Chief Sanitary Inspector.

PERHAPS the most interesting item in this Report is the map showing the relative position and boundaries of the municipal wards, and the overflow movements of the residential population since the census of 1901. The central wards, as a whole, decreased by over 27,000 persons, while the outer wards increased by almost 59,000. This is a striking fact at the present time, when it is remembered that this increase only shows the tendency to migrate farther outwards, generally altogether beyond the municipal area.

With reference to overcrowding, almost 6 per cent of the houses inspected were found to be overcrowded, some of them grossly.

Under the Sale of Foods and Drugs Acts the inspectors were as busy as ever, and, as usual, the adulteration of milk and butter, with contraventions of the Margarine Act, show prominently in the results.

With regard to smoke abatement, it is interesting to find that in a large number of cases improvements upon furnaces have been made by owners to prevent excessive smoke.

The elaborate tables in the latter part of the Report greatly enhance the value of the latter.

Report on the Conditions prevailing in Scotland in respect of the Provision of Public Slaughter-Houses by Local Authorities, and as to the Methods of Meat Inspection conducted by various Local Authorities, with Suggestions for Improvement. By FREDERICK DITTMAR, M.A., M.D. Glasg., D.P.H. Camb. Official Copy. Published 1908.

THE heading of this Report fairly well summarises the contents, which show how much is yet to be done before this important department of public health is brought into line with modern requirements. Almost all available information has been utilised in the Report, which is about as exhaustive as it could well be. The suggestions for improvement are carefully thought out, and while in one sense they do not go far enough, it is perhaps advisable to conciliate public opinion by "hastening slowly" in this direction. Certainly it cannot be very long before further restrictions become clamantly necessary.

Nouveau Traité de Chirurgie Clinique et Opératoire. Publié en fascicules sous la direction de A. LE DENTU and PIERRE DELBET. I, Grands Processus Morbides, Traumatismes, Infections, &c. Par PIERRE DELBET, M. CHEVASSU, A. SCHWARTZ, and V. VEAU. Avec 53 Figures intercalées dans le Texte. Paris: J. B. Baillière et Fils. 1907.

IN the preface to this work the editors express their feeling that since the *Traité* appeared originally many things in surgery which were then hypothetical have by research and experience become realities. They do not pretend that all the problems of medicine have been solved—the march of science can never stop, and in bacteriology, histology, experimental pathology, and biological science there is still an immense field awaiting exploration. There are, however, moments when, after the accumulation of facts in a short space of time, there seems to be a slowing or almost a halt in progress, and the editors ask if we have not at present come to a point when we may with propriety sit down and review the position of affairs. Of course, facts, no matter what their age, remain; but in a new work it is necessary to add to these those of more recent acquisition, and, further, to mention such aids to investigation as radioscopy and radiography. We cannot do better than quote:—"Ainsi, tout en restant fidèles à l'esprit de conservation et au respect du passé, nous avons ouvert la porte . . . en un mot au progrès sous toutes ses formes."

The work is being issued in fasciculi, for several reasons. It is a convenient way of presenting monographs or groups of allied affections, and it has the further advantage of rendering possible the more rapid publication of the work.

In the present fasciculus we have three of the great morbid processes—traumatisms, infections, and vascular and atrophic disturbances—taken up. In an appendix, cicatrices and their treatment are considered; and we have here also the principles of skin-grafting.

The section on traumatism is systematically arranged. Thus, we have contusions and wounds, followed by a consideration of the lesions produced by physical and chemical agents. Then, non-septic complications, such as pain, hæmorrhage, traumatic fever, shock, &c., are taken up. The relation of general ailments to traumatism comes next; this chapter comprises hæmophilia, infections, &c.

The section on infections forms a large part of the volume. Beginning with infection in general, under which is comprised inflammation, immunity, and agglutination, we pass to special infections. These are subdivided into specific and non-specific. In the former sub-group are syphilis, tubercle, tetanus, &c., and in the latter, septicæmia, phlegmons, and abscesses.

Under the heading of vascular trophic disturbances come gangrene and ulcers.

It is impossible to notice all the articles, but we would mention that on hæmophilia, as giving a very complete and readable account of the subject. Similarly, immunity and agglutination are expressed with a simplicity which is distinctly attractive. Again, in the chapter on gangrene, we have a good and systematic description of causes, clinical varieties, &c., and the treatment of the different types of cases is extremely well laid down.

To those who read French we would recommend this volume as one in which they will find much information, clearly put, and many useful hints on the nature and treatment of the conditions with which it deals. The want of an index, however, is a distinct drawback.

Hygiène Coloniale. The Eleventh Fasciculus of the "Treatise on Hygiene." Edited by MM. BROUARDEL et MOSNY. Paris: J. B. Bailière et Fils. 1907.

THIS volume contains three coloured plates and sixty-nine figures in the text, and is contributed to by nine scientists of distinction in the department of colonial hygiene.

In the section on general colonial hygiene, M. Wurz discusses tropical climatology and the results of residence in the tropics on Europeans generally. The prophylaxis of tropical maladies is gone into at some length.

Special colonial hygiene is discussed by MM. Edmond et Étienne Sergent, while the hygiene of the French possessions in East and West Africa is described by MM. Fontoynont et Marchoux respectively.

The remaining contributors cover the same ground with respect to the various French possessions in Indo-China, New Caledonia, &c.

In every section the same exhaustive and thorough methods are employed as in the fasciculus on Naval Hygiene, a notice of which appeared in these pages a few months ago. Particularly noticeable is the description of the modifications which the ordinary diseases of Europeans undergo when contracted in tropical parts of the world.

The present volume is invaluable to medical officers of health whose work lies in or near the parts of the world specially indicated by the contributors.

The illustrations are, in most instances, inferior in merit to the text, but an exception must be made in the case of the two-page map and the description of the sanitary arrangements in Madagascar.

Verhandlungen der Berliner medizinischen Gesellschaft aus dem Gesellschaftsjahre, 1906. Herausgegeben von dem Vorstande der Gesellschaft. Band XXXVII. Berlin: Druck von L. Schumacher. 1907.

As in previous years, the contents of this volume of *Proceedings* is in two parts. In the first are the discussions and shorter communications; in the second are the more important papers which have been read before the Society during the year.

The list of subjects is of the varied nature which one is accustomed to in the billets of a medico-chirurgical society, and the volume contains matter which is likely to prove of interest alike to the specialist and the general practitioner.

Life Insurance and General Practice. By E. M. BROCKBANK, M.D.Vict., F.R.C.P. Oxford Medical Publications. London: Henry Frowde and Hodder & Stoughton. 1908.

WE have pleasure in bringing this interesting book under the notice of those who are engaged in the routine examination of applicants for insurance purposes. In it are set forth in a judicial manner the various conditions met with on which the medical referee has to give a direct opinion and report.

Perhaps the most commendable feature of the volume, apart from the unanimity which most authorities entertain regarding certain physical states rendering a life absolutely uninsurable, consists in the manner in which the author treats of pathological tendencies which are as far removed from the uninsurable type of case as they are from unexceptional lives. This is the type of case that gives the medical examiner the greatest difficulty, and the author has succeeded in bringing together in a concise manner the views of leading authorities on those conditions, while at the same time stating his own individual view.

It is impossible to go into detail in a review of a work of this kind. Suffice it to say that this is one of the best books we have read on this subject, and that it will amply repay a careful perusal.

Blood Examination and its Value in Tropical Disease. By CLAUD F. FOTHERGILL, M.B. London: Henry Kimpton. 1907.

THIS little volume is more of the nature of a plea for the routine examination of the blood in tropical diseases, than a text-book detailing the various methods of carrying out such examinations. If one were sceptical of this most valuable adjunct to diagnosis, and especially in the case of tropical disease, the perusal of this work would be assuredly most convincing. The first portion is devoted to a consideration in general of the various pathological states of the blood in different tropical maladies, while in the second half are briefly related the histories of some thirty illustrative cases, in which a blood examination was invariably of the utmost importance.

We cordially commend this volume to the notice of all physicians and surgeons, and especially to those interested in tropical medicine.

Blood-stains: their Detection and the Determination of their Source. By MAJOR W. D. SUTHERLAND, M.D. London: Baillière, Tindall and Cox. 1907.

With regard to the age of a blood-stain the author seems to regard Pfaff's scale as untrustworthy, but the table which he quotes from Tamassia's article on this subject is evidently incomplete, as only in three instances is the age of the stain given.

In the chapter on chemical tests for blood-stains the author gives in minute detail the history of the guaiacum test, and concludes by giving it as his opinion that "it is well to dispense with a test which has so little value as this test has," a conclusion with which few experts will agree. In the same way he considers Gantter's test of great negative value, but it is quite evident that negative tests might easily be multiplied indefinitely, and if a so-called test has only negative value it should not appear as a chemical test for blood at all. With regard to Teichmann's test it is very properly pointed out that great care must be taken to avoid moisture and over-heating.

The spectroscopic method of examining blood-stains is treated in a short and inadequate chapter, considering the importance of this method, although proper stress is laid upon the discovery of hæmatoporphyrin. This chapter is simply a *résumé* of the facts, and is of small value as a guide to the actual manipulations necessary. Further, the author seems to believe that it is essential that the ammonium sulphide in the reduction test must be *old;* as a matter of fact, freshly prepared sulphide acts perfectly if an excess of sulphur be allowed to digest with the liquid for some hours.

In the chapter on the microscope in the detection of blood-stains, the author goes out of his way to attack the statements of various authorities who were of opinion that by measurement of the corpuscles definite information as to the origin of the blood could be obtained. It is almost universally acknowledged now that extremely minute differences in the diameters of the red blood cells cannot be depended upon, in any forensic case at all events. At the same time, microscopic examination and micrometry have their value as links in the general chain of proof, and are of more than the negative value which the author ascribes to the guaiacum test, for instance.

More than half of the book is occupied with the discussion of the various serological tests for blood-stains. The author considers the agglutination test of no value for forensic purposes. In the hæmolytic test the real inutility of the process is pointed out in the fact that only rarely in forensic cases can a sufficient number of intact red cells be obtained. The complement-deviation test is given at length, and quite sufficiently in detail to show its slight practical value in forensic cases at the present time. Curiously enough, in the preface the author says that "the alexine-fixation or complement-deviation test is new, and on its trial. Founded as it is on the sure basis of demonstrable facts of serology, it is bound to be accepted by all courts in the end."

The precipitin test is carefully and fully described, and the researches of Uhlenhuth, Wassermann, and others are correctly indicated.

As an indication of the present state of our knowledge of blood-stains and their detection the present work serves a purpose.

The bibliography at the end is voluminous, and, taken in connection with the statements in the preface, shows that Dr. Sutherland must have lived laborious days in collecting the information.

There are two excellent plates of blood spectra at the end of the book. The absence of an index is a distinct disadvantage.

Tumours of the Cerebellum. By JOHN WYLLIE, M.D. London: H. K. Lewis. 1908.

THIS little book is intended for the use of students preparing for the final examination. In it are analysed a number (80) of recorded cases of cerebellar tumour, proved to have been such by operation or *post-mortem.* The anatomy and physiology of the cerebellum are summarised; the various symptoms of cerebellar tumour discussed at some length; the structure, frequency, causes, and site shortly considered; likewise the diagnosis, prognosis, and treatment, including operations and their results. A short bibliography is appended, and there is an index.

As already indicated, there is little that is original in this work. For students, it would seem to us to be too detailed in parts, especially the chapters dealing with symptoms. There is much in the volume that would have led us to expect that the author's recollection of the final examination would not have become so dimmed by the lapse of years as to lead him to err in this direction. For practitioners, the book is, as a whole, too elementary, and not full enough to be of much value, although the chapters already mentioned, dealing with symptoms, contain a good deal that is interesting and important. Sometimes we have failed to understand the author's meaning. On page 21, for example, it is stated that, in his examination of recorded cases of cerebellar tumour, optic neuritis occurs in 15 to 16 per cent, while on page 22, we understand him to say that optic neuritis occurs in almost all cases of cerebellar tumour. Again, on page 72, in the list of cerebellar tumours, four are fibromata, but on page 75, in referring to this list, he says the fibromata are represented by one. On the whole, however, it is a careful piece of work, clear and concise, and may be of some use both to students and practitioners.

A System of Radiography, with an Atlas of the Normal. By W. IRONSIDE BRUCE, M.D. London: H. K. Lewis. 1907.

As the author justly observes in his preface to this *Atlas*, sufficient attention is too often not paid to the relation between the source of the x-ray and the part which is to be examined. The resulting radiogram is, therefore, in many cases useless. He pleads, although one might think such a plea unnecessary, for a systematic technique: the tube being placed in a definite position *quoad* the part to be radiographed.

A brief description of the apparatus and method of using it is prefixed. The apparatus is ingenious, being simple and accurate.

There are 108 plates in the *Atlas*. These are reproductions of radiograms of different parts of the body, taken at different ages, of actual size and without retouching. Each set of radiograms is taken in a definite position, and the individual plates of any one set may be compared with one another. Take, for example, "Position II." The radiograms, four in number, in this set represent a lateral view of the tarsal bones and ankle-joint, from without inward. The first plate is from a photograph, showing the patient in position with the anode below the tip of the internal malleolus. The remaining three plates show radiograms taken at the ages of 5, 15, and 25 years respectively. They are from normal subjects, and give us at a glance the appearances of the bones at these different ages, showing relative amount of osseous tissue, epiphyses, &c.

We have a suggestion to make, viz., that the plates are frequently from limbs of different sides. In Position XXI, again, the plates are not placed identically on the page. Such a circumstance is an inconvenience, and it might lead to mistakes on the part of the reader.

This work is a very valuable addition to the surgeon's library. The principle which it inculcates is sound, and the plates are indispensable for reference. It is a volume which should be in the x-ray department of every hospital.

The Major Symptoms of Hysteria. By PIERRE JANET, M.D. New York: The Macmillan Company. 1907.

THE book consists of fifteen lectures delivered in the Medical School of Havard University during the months of October and November of last year; and they may, perhaps, be best characterised as a very excellent summary of Professor Janet's views regarding the nature of hysteria. This disease, according to the lecturer, must be regarded from the psychological point of view, for the various phenomena or symptoms met with in hysteria can all be referred to a peculiar mental state, the chief feature of which seems to be a sort of contraction of the field of personality. The somnambulisms, convulsions, contractures, paralysis, and anæsthesias are all explained in this way. With the onset of a somnambulism, the patient pays less and less attention to what you say to him or to what goes on round about him, and he gives himself up more and more to his fixed idea—his dream, which he expands in a very realistic way. His mind, and his memory, too, seem to be contracted for everything except the particular delirium in hand. Most hysterical fits or convulsions are just somnambulisms, but usually less picturesque and less intellectual in their expression. The same idea explains the contraction in the fields of vision in the hysterical, for the patient, in looking at an object, so concentrates his mind on that object as to be more or less oblivious of other objects at the periphery of his field of vision. These latter are not regarded, and are said not to be seen. The same in regard to hemi-anæsthesia, for while the patient has no personal perception of touch, heat or cold, or painful impressions, yet he has a subconscious appreciation of them, else, why does he not unconsciously hurt himself in the way a patient with syringomyelia does? But one cannot do justice to Professor Janet's teaching in a short review such as this, and we rather refer the reader to the book itself. He will find it is full of interest from beginning to end; it is well conceived, well planned, and the argument is logically and well sustained throughout. It is certainly one of the most interesting volumes we have read for a considerable time.

An Index of Treatment by Various Writers. Edited by ROBERT HUTCHISON, M.D., and H. STANSFIELD COLLIER, F.R.C.S. Bristol: John Wright & Co. 1907.

"THE present work is intended to provide the practitioner with a complete guide to treatment in moderate compass, and in a form convenient for reference." Following the preface is a list of contributors and their subjects. It would be invidious to mention names, but one has only to glance at the list to see that it includes those of many of the best known members of the profession.

On referring to the contents of the volume, the articles are found to be of good length, and to exhibit a practicality which will appeal to those for whom the work is written. The subjects are arranged in alphabetical order, and, where necessary, cross references are inserted. There is also a comprehensive index.

The editors have done their work well, and have been ably helped by the publishers in the production of a volume which is both handsome and full of merit.

Cancer of the Womb: Its Symptoms, Diagnosis, Prognosis and Treatment. By FREDERICK JOHN MCCANN, M.D.Edin., F.R.C.S.Eng., M.R.C.P.Lond. London: Henry Frowde and Hodder & Stoughton. 1907.

THIS work is a volume of the Oxford Medical Publications, a new series of medical works which have been prepared under the supervision of Dr. J. Keogh Murphy, and with the advice and assistance of Professor Osler.

Dr. McCann has had an extensive experience in the treatment of cancer of the uterus, and he is well qualified to write on the subject. He has produced a very valuable book.

Each type of cancer has been illustrated by one or more clinical examples, together with a plate representing the diseased tissue removed. The illustrations are largely from photographs of the specimens taken shortly after removal. The plates are very good and convey an excellent idea of the conditions present. Deciduoma malignum is dealt with and a number of cases given with illustrative plates.

Throughout the book there are a number of valuable statistical tables.

The final chapter of the book is devoted to the consideration of the treatment after operation. The book is a valuable contribution to the subject of malignant disease of the womb.

Obstetrics: A Text-book for the use of Students and Practitioners. By J. WHITERIDGE WILLIAMS, M.D. Second Enlarged and Revised Edition, with 16 Plates and 666 Illustrations in the Text. London: Sidney Appleton. 1908.

IN this edition (the second) the author has not only revised the whole text, but he has rewritten the chapters upon the development of the ovum and upon the toxæmias of pregnancy. He has also added sections upon the metabolism of normal pregnancy, vaginal Cæsarean section, pubiotomy, and contractions of the pelvic outlet. Many of the old illustrations have been replaced and a number of new ones added. The volume is thus somewhat increased in size.

Dr. Williams has made a special study of the metabolism of normal pregnancy and the toxæmias of pregnancy, and the chapters on these subjects are very valuable. The sections of the book dealing with anatomy and physiology, and also the theoretical parts, are extremely good, but the practical parts are weak. For instance, in describing decapitation in impacted transverse cases he gives Braun's method with the blunt hook, and does not mention any of the cutting hooks such as Ramsbotham's.

At the end of each chapter there is a list of literature, which in some cases runs into several pages, so many authorities must have been consulted. The illustrations are beautifully executed. Specialists will find the book a most valuable one, but we doubt very much if it will prove of equal value to the general practitioner.

Pelvic Inflammation in the Female. Being the Ingleby Lectures delivered at the University, Birmingham, 9th and 16th May, 1907. By THOMAS WILSON, M.D.Lond., M.Ch.Birm., F.R.C.S.Eng. Bristol: John Wright & Co. 1907.

THIS small treatise of 65 pages consists of the Ingleby Lectures delivered by Dr. Wilson at the University of Birmingham in May, 1907. Dr. Ingleby practised in Birmingham from 1816 until his death in 1845, and the lectures were established in connection with Queen's College in 1876 to promote "the advancement of obstetric medicine and surgery, including diseases of women and children, being a branch of medical science in which Dr. John Tomlinson Ingleby acquired considerable reputation."

The lecturer states that Dr. Ingleby was without a provincial rival, and refers to his publication on several epidemics of puerperal fever which occurred in Birmingham in 1826, 1833, and later. In 1838, Ingleby insisted on the contagiousness of puerperal fevers and considered that erysipelas and puerperal fever were due to the same morbid poison.

Dr. Wilson maintains that it is a disadvantage that inflammation of the uterus and its appendages are considered partly in the text-books on midwifery, and partly in those on diseases of women, and moreover, in the latter group of books the subject is often scattered piecemeal throughout the volume. He has endeavoured to give a succinct account of pelvic inflammations in the female as they are met with in practice. In the six chapters of the book he deals with the subject in a very practical way. He has had a wide experience in dealing with such cases, and his opinions and conclusions are therefore much more valuable than if he had based them upon the experience of others.

We cordially commend the book.

The Edinburgh Stereoscopic Atlas of Obstetrics. Edited by G. F. Barbour Simpson, M.D., F.R.C.P.E., F.R.C.S.E., and Edward Burnet, B.A., M.B., Ch.B. In Four Sections, each containing 25 Subjects with Descriptive Text. London: The Caxton Publishing Company. 1908.

We have been favoured with Section I, which contains 25 plates, illustrating both normal and abnormal female pelves. The stereograms are attached to the bottom of the cards, the upper portion being reserved for the letterpress describing the main features to be observed. The first six plates illustrate the normal pelvis, both as a whole and in coronal and sagittal section. Plate 7 contrasts the female with the male pelvis. The other eighteen plates show various deformed pelves, such as flat, malacosteon, kyphotic, Nægele, Robert's, &c., and in most of these the text gives more than an anatomical description, as the operative management during labour is also indicated. Plate 16, representing rachitic flat pelvis, goes still further, as it has in addition a short account of the mechanism of labour peculiar to this deformity.

The photographs are excellently reproduced, and deserve all praise. We fear, however, that the price (£4, 4s.) will prove too much for the purse of the average student, to whom this *Atlas* would be specially welcome as an aid to home study. Although no photograph, however excellent, can replace the actual specimen for teaching purposes, yet this series of stereograms will be found useful for small tutorial classes, especially where it is undesirable to have valuable specimens too freely handled.

Practical Diagnosis: The Use of Symptoms and Physical Signs in the Diagnosis of Disease. By HOBART AMORY HARE, M.D., B.Sc. Sixth Edition. London: Henry Kimpton. 1907.

IT is difficult to keep in moderation one's appreciation of this admirable volume by Dr. Hare. The book is one which, in the synthetic attitude the author takes up in viewing pathological conditions, and the extreme methodical care with which he collects his facts, must be numbered among the best expositions published.

Every known method of physical diagnosis is brought to bear on conditions discussed, and the various steps are as thorough as they are clear and convincing.

Dr. Hare brings to his aid the methods of examination which are carried out in the laboratory, but these are only used when other means of physical diagnosis involving refinement in the senses of touch, hearing, and sight have been completely exhausted.

Of course, in the examination of the blood and urine, laboratory methods are essential to arrive at correct results, but in this book the author has succeeded in an eminent degree in showing all the methods of diagnosis that can be made use of at the bedside. To accomplish this, the symptoms are first discussed, and their application to determine the character of the disease follows. Thus, instead of describing locomotor ataxia or myelitis, there is a chapter discussing the various forms and causes of paraplegia, so that the physician in a case of paraplegia can find the various causes of this condition and the differential diagnosis between them. In this volume the main principle which is adhered to is the upbuilding of a diagnosis by grouping the symptoms—a method which is quite the reverse of that adopted in ordinary treatises.

The volume is illustrated by 203 engravings and 16 coloured plates.

We can confidently recommend this book to the notice of general practitioners as one likely to greatly assist them in disentangling many difficult diagnostic points in cases brought under their care.

Precious Stones for Curative Wear and other Remedial Uses: likewise the Nobler Metals. By W. T. FERNIE, M.D. Bristol: John Wright & Co. 1907.

IN his preface to the present work the author tells us that this is the last time he means to seek the suffrages of the public in print. Having written on *Herbal Simples, Animal Simples, Kitchen Physic*, and *Meals Medicinal*, Dr. Fernie has selected what strikes us as quite a fitting subject for the volume which is to bring his series to a conclusion. To those who wish to have beside them a book which they can pick up at any odd moment, feeling sure that wherever they open it they will find something of quaint interest if not of strictly scientific value, and a book which, whenever they open it, will tempt them to continue reading it, we strongly recommend this little monograph.

Treatment by Hypnotism and Suggestion. By C. LLOYD TUCKEY, M.D.Aberd. Fifth Edition. London: Baillière, Tindall & Cox. 1907.

THE interval that has elapsed since the fourth edition of this well-known work was published in the year 1901 has not been marked by any striking development of hypnotic theory or practice. The present edition is much larger than any previous one, and it has been thoroughly revised by the author. It is almost unnecessary to say that this work, like all those of Dr. Lloyd Tuckey, is written in a clear, simple, and graphic manner. It should be read by everyone in the active practice of medicine. It will be found of much value. The scientific investigation and use of the phenomena supplied by suggestion and hypnotism do not yet, in this country at least, receive the attention they deserve. Specially useful will psycho-therapeutics be found in that ever-increasing class of cases which forms the vague borderland between sanity and insanity; such, for instance, are dipsomania, the opium habit, the excessive use of tobacco and other narcotics, &c.

Dr. Lloyd Tuckey has made numerous extracts from Forel's work (*Hypnotism: Psycho-physiological, Medicinal, &c.*, fifth edition). Forel's views on chronic constipation are interesting. He narrates many cases to show how "suggestion acts by restoring a natural function, whereas drugs pander to a weakened and diseased subconscious craving, and perpetuate it." The case of a confirmed drunkard, 70 years of age, who, after twice attempting suicide, was placed under Forel's care, is cited. This man was nine years in an asylum. After being hypnotised he reformed, and though he lived for eight years after his reformation he did not relapse. The case here instanced is, to the reviewer's mind, extreme, and one of the few doubtful ones of the many illustrations of the advantages of psycho-therapeutic treatment. It is adduced to point out that while the treatment should in every case be carried out with energy and enthusiasm, the medical practitioner must not be too sanguine as to the permanency of any beneficial results he may obtain. It is seldom that such a case of habitual alcoholism can be treated with the same good result.

There is much useful advice given about the many varieties of functional and organic disease susceptible to improvement and satisfactory treatment. In asthma it is specially recommended. Psycho-therapeutic treatment is part of the armamentarium of many practitioners on the Continent, and the reviewer had recently the opportunity of seeing a clinique in Amsterdam where twenty-three rooms, specially adapted for this purpose, were used in the treatment of from sixty to seventy patients daily.

The theories on the action of hypnosis are fully discussed in Chapter IX, as also is the relation of hypnosis to natural sleep, reverie, mental concentration, intense nervous excitement, religious ecstasy, post-epileptic states, the effects produced by alcohol and various drugs, catalepsy, and somnambulism. The vexed point is whether hypnosis is pathological and a neurosis, as was contended by Charcot, or physiological and even indicative of perfect health, as is asserted by Bernheim, Voisin, Forel, Déjepine, and others. Dr. Lloyd Tuckey agrees with Tamburini, who impartially holds the balance between the theories of Bernheim and those of Charcot. He considers that hypnotism is a physical state which may be induced in healthy persons, and which is as varied in its manifestations as are the temperaments and constitutions of the subjects.

A review of this work would be incomplete without reference to an introductory chapter by Sir Francis R. Cruise, M.D., in which he tells the story of how he came to study hypnotism, to believe in it, and to practise it in all cases which appeared suitable.

An Essay on Disease: Its Cause and Prevention. By G. E. Richmond, M.D. London: H. K. Lewis. 1907.

This little book, which advocates the cellular physiology, is intended to point out the large number of diseases which are either spread by food or are directly due to impurities found in articles of diet. A worthy employment, certainly, and satisfactory, had less assertion and more proof been given with the conclusions sought to be enforced. In a general way, most people will concede that excessive and inconsiderate feeding leads to the occurrence of disease sooner or later. We are not convinced, however, by such bald statements as these—"The cankers produced in the mouth are due to some irritating substance in the food, and if introduced into the stomach would probably be able to cause perforating gastric ulcer." "Appendicitis is certainly due to some substance contained in food, which acts upon the appendix." "Catalepsy can be induced by toxins or poisons contained in some articles of diet (*e.g.*, tapioca)." The following truism is better—"Regularity of habits is of great importance; waste products retained in the bowels tend to decompose, and the products of their decomposition are absorbed from the intestine."

What is the author's remedy for food diseases? Laying almost no stress on the evils of unnecessary and excessive eating, he pleads for more careful watching of our food supplies. "Every establishment where food or drink is sold should be under the supervision of one or two medical men. A medical expert should be attached to every milkman, every baker, every grocer, and every butcher, who should hold himself responsible for any disease which may arise from any food coming from that shop or establishment."

And who is to pay for this minute supervision? We opine that the British taxpayer, who may be willing that the sale of milk cannot be too strictly looked after, will be disposed to leave the detection of adulterated articles to the present sanitary staffs, who, in not a few instances, have brought milk diluters and grocery adulterators to justice, and proved themselves a terror to evildoers.

Minor Maladies and Their Treatment. By LEONARD WILLIAMS, M.D., M.R.C.P. Second Edition. London: Baillière, Tindall & Cox. 1908.

THIS most useful book has been carefully revised for the second edition, and the new matter, though not bulky, is important. In particular, that section in Chapter I (pp. 33-48), entitled "A Constant Succession of Colds," deals carefully and clearly with what is termed the pre-tuberculous stage of phthisis. Tachycardia, albuminuria, dyspepsia, mental hebetude and muscular debility, suppression of the menses, pyrexia, psychical characteristics, exalted sexual appetite, anæmia, and functional aphonia are discussed in detail as symptoms of this disease before the appearance of physical signs in the lung; and due weight is given to temporary paresis of one vocal cord, the ulnar reflex, von Pirquet's cuti-reaction, and Calmette's ophthalmo-reaction.

A new paragraph is devoted to the importance of considering ovarian irritation as a cause of dyspeptic symptoms (p. 79), and mucous colitis forms another addition (p. 116) of considerable value. A careful warning is given (p. 223) on the danger of rapid reduction of unduly high blood-pressure due to mitral stenosis and to intracranial pressure. It is evident from the references that Dr. Williams has availed himself of recent literature in the preparation of this new volume, and his treatment of new matter is eminently reasonable and convincing.

The form and arrangement of this volume are identical with those of the last. The copious index has been revised, and there are very few typographical errors.

ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

MEDICINE.

Congenital Absence of the Gall-bladder. By J. S. Stone, M.D. (*American Journal of Medical Sciences*, June, 1908).—A woman, aged 54, was operated on for gall-stones. At the operation the gall-bladder was definitely absent, and the duodenum and pylorus were elevated, and appeared to be attached along the notch, which is usually the seat of the gall-bladder. Stones were found in the hepatic and common ducts. A careful search was made for the gall-bladder, but neither it nor any vestige of the cystic duct could be found. Although the patient had been ill for many years, there had been no well-marked attack of gall-stone colic. Recovery was slow, but ultimately complete. Absence of the gall-bladder is comparatively rare, and the majority of cases are seen in young children and at the *post-mortem* table. Rigid search should be made for apparently absent gall-bladders, for in severe inflammatory conditions the organ may be lost from view, or, if shrunken, mistaken for one of the ducts.—ARCH. W. HARRINGTON.

Congenital Pyloric Spasm and Congenital Hypertrophic Stenosis of the Pylorus in Infancy. By Henry Koplik, M.D. (*American Journal of Medical Sciences*, July, 1908).—Koplik is convinced that congenital pyloric stenosis can no longer be classed amongst the rare disorders occurring in infancy. In discussing the symptomatology of the affection, he points out that the children are born perfectly well. The great majority have been breast-fed. After a while, varying from one to four days, in other cases seven days, and in a great many cases the third week after birth, vomiting begins. The vomiting occurs at first at intervals throughout the twenty-four hours, and soon becomes persistent, the child rejecting a portion or all of every nursing. A characteristic sign of retention is the vomiting of more than has been taken. There is steady emaciation, or sometimes, more fortunately, a stationary weight. Every time the breast is given to the child, or within a few minutes after nursing, there are evidences of pain. Constipation is present in most cases, or the movements are very small, sometimes fluid, or they may be greenish. As as rule, the movements indicate that very little has passed through the gut. Visible peristalsis is present. Koplik has never seen reverse peristalsis prior to vomiting, as is described by some authors. The vomiting is projectile in its nature. In some cases careful examination during the period of contraction and peristalsis reveals a small, hard nodule, cartilage-like in consistency, situated beneath the liver or its border, and running directly downwards towards the umbilicus. This is undoubtedly the pylorus. Visible peristalsis is present in the majority of cases, but does not necessarily accompany all. A normal mild form of peristalsis seen in emaciated infants must not be confused with it. There is no fever. Dilatation of the stomach is difficult to determine, and Koplik considers dependence on the signs of dilation is of questionable utility.

The first set of cases reported and analysed consists of those in which there is an undoubted spasm of the pylorus, initiated by some error in feeding, or by some toxic element which immediately after birth has irritated the stomach itself, causing a mild form of increased peristalsis, resulting eventually, as it becomes more marked, in the symptoms of spasm of the pylorus. The pylorus is not, as a rule, palpable. Peristalsis is not always visible, and when present is not very marked. The children vomit after every feed, and at times reject even more than has been taken. The outlook is good, and Koplik considers that many of the cases recorded as having recovered without operation belong to this group.

In a second group, cases of congenital spasm of the pylorus are detailed. In these there is vomiting from birth.

In the third group there is a distinct hypertrophic stenosis of the pyloric orifice, as well as a spasmodic contraction. In these cases there is a distinct and disordered contraction of the stomach, which is visible on the surface of the abdomen. This peristalsis is so marked that in severe cases the stomach seems to erect itself, that is, the cardiac end upon the pyloric end, as if the cardiac end of the stomach was making a supreme effort to drive the food through the contracted pylorus. In such cases the pylorus can be felt distinctly as a hard, nodular mass underneath the liver, sometimes midway between the umbilicus and the free border of the liver. In fact, in stenosis all the symptoms present in spasm are aggravated. Little or no milk fæces are seen, whereas in spasm a certain amount of milk is allowed to pass. The prognosis is fraught with difficulty. Spasm cases eventually recover when a suitable diet is found. In true hypertrophic stenosis ultimate recovery is not impossible without operation. Koplik says, "We cannot but feel that most cases will escape the surgeon, and only the rare cases reach the operative phase."

In discussing treatment, feeding, mechanical means of therapy, drugs, and operative means are considered. Posterior gastro-enterostomy is the operation proposed, and no mention is made of pyloroplasty.

—Arch. W. Harrington.

The Early Diagnosis of Typhoid Fever by Blood Cultures from the Ear. By O. R. Mabee, M.D., and A. E. Taft, M.D. (*Boston Medical and Surgical Journal*, 4th June, 1908).—These observers studied 120 consecutive patients admitted as typhoid fever cases during a recent epidemic in Boston. As suggested by Conradi, they used ox bile as a culture medium, transferring loops of it to plain bouillon six, twelve, or more, hours after inoculation to facilitate examination, the dark colour of the bile mixed with blood making it difficult to determine the presence of a few organisms. The blood was taken from the ear, and for examinations during the first week about fifteen drops were usually sufficient. After that date a larger quantity of blood gave a greater percentage of positive results. Usually the organism was recovered (if at all) after the first transfer from bile to bouillon. If not recovered at the end of thirty-six hours the result was considered negative.

Of the 120 cases admitted, 98 subsequently developed typhoid symptoms. Of 20 cultures able to be made during the first week, 19 gave positive results, while only 1 gave a positive Widal. Of 71 cultures made during the second week, only 14 were positive, while all showed a positive Widal. Of 7 in the third week, 1 gave a positive culture, while again all gave a positive Widal.

Again, two patients exposed to infection gave a positive Widal with negative culture results on the third day, and did not develop symptoms. In 22 cases admitted as typhoid, but in whom no symptoms developed, the cultures were negative, except that in 1 case the staphylococcus pyogenes aureus was found on two examinations.

The authors conclude that blood cultures give an accurate diagnosis in early cases (*i.e.*, during the first week), while a Widal reaction is rarely got before the ninth or tenth day.

During the second and third weeks the organism is present in smaller quantities in the blood, and more accurate results will be obtained by using double, or more than double, the amount of blood, as proved by other observers.—Geo. A. Allan.

Some Observations on Acetonuria. By Allen G. Rice, M.D. (*Boston Medical and Surgical Journal*, 9th July, 1908).—This investigation refers only to cases of acetonuria occurring after operation, and covers a series of 202 cases. It was suggested by the condition of a patient operated on for catarrhal appendicitis under ether. After being well for three days, on the fourth he was sick, and vomited apparently without cause. Pulse was rapid and feeble, while temperature remained normal. Urine showed acetone and diacetic acid. Recovery took place under treatment with huge doses of alkali. After this the urine of all patients submitted to operation was examined, viz., the first urine passed after operation, and a specimen from each day's urine for the first seven days. All specimens showing sugar or acetone before operation were excluded from the series.

Of the 202 cases, acetone was present in 179, or about 90 per cent, but only in 17, or in about 10 per cent, were there any symptoms which might point to acid intoxication. In only 1 other case than the first were the symptoms at all severe, and it was fatal. The other 15 gave no cause for alarm. The second and especially the third day after operation were the commonest times for acetone to appear. After the fourth it is rare, and it did not appear at all after the sixth. Diacetic acid was also tested for, but it was never found unless acetone was also present; it was not present in the cases showing no symptoms, and of the 17 cases with symptoms it was only present in the 2 cases with very severe symptoms. Of the 17 cases with symptoms, 9 had had abdominal operations, 2 had had hæmorrhoids burned off, 1 an amputation, 2 cancer of the tongue, and 3 kidney operations.

In the fatal case, at the autopsy there was a certain degree of fatty infiltration or degeneration of the liver.

Apart from the condition of the urine, the clinical evidence of the condition was manifested first by a peculiar apathy and marked distaste for food. Persistent vomiting set in within from four to eight hours after the acetone was present in the urine. The breath had a characteristic, pungent, sweetish odour. The countenance became grey and cyanotic, with sunken cheeks and lustreless eyes. Great restlessness and exhaustion were also marked features.

The treatment consisted in high rectal injection continuously of a saturated solution of bicarbonate of soda. After the cessation of the vomiting, large doses of the drug were given by the mouth.

The author can come to no definite conclusion as to the cause of the condition. Starvation has been known to be a cause of acetonuria, and he thinks this may be one factor in these cases, the acetone usually appearing at the time of maximum starvation after the operation, namely, the third day. In each case a general anæsthetic, ether, was given, and these are the only factors common to all the series. He does not consider acetone the cause of the acid intoxication, but regards it as a good danger signal.—GEO. A. ALLAN.

SURGERY.

Tubercular Urethritis and Tubercular Stricture of the Urethra. By MM. X. Delore and A. Chalier (*Gazette des Hôpitaux*, No. 54, 9th May, 1908).—As with the other portions of the genito-urinary tract, the urethra does not escape from tubercular disease. It may, primarily or secondarily, take the form of tubercular urethritis, tubercular stricture, or tubercular peri-urethritis. The infection is usually secondary to renal or vesical lesions, and may arise from urinary contamination, the bacilli being ferried to the urethra, from direct extension from the trigone or prostate, or from spermatic contamination in cases of tubercular epididymitis.

Primary conditions are much rarer. Some admit direct urethral infection in the male from coitus. Nocker in Germany has certainly seen cases produced after circumcision with buccal hæmostasis. Some primary cases may be due to blood infection.

Tubercular urethritis is more common in the male, explained by the greater length and sinuosity of the urethra favouring stagnation of infected urine.

Gonorrhœa appears to have no direct predisposing relation to tuberculosis, but a few cases have been seen where gonorrhœa has apparently locally injured the vitality of the urethra, and indirectly favoured growth of the bacilli. As is the case with gonorrhœa, tubercular urethritis falls into the two classes of anterior and posterior urethritis.

Posterior tubercular urethritis is limited to the prostatic urethra. The primary form has been noted without vesical tuberculosis. A marked congestion of mucous membrane is seen, of a reddish violet colour, with the characteristics of granulations and ulcerations. The granulations are grey or yellowish, and disseminated in a discrete or confluent manner. Ulcerations have the appearance of tubercular ulcers of the intestine. These lesions are especially seen on the sides of the verumontanum, where the prostatic ducts and the ducts of Littré's glands open. At a late stage ulceration is extensive, and produces large, eroded peri-urethral caverns or abscesses. Sometimes cicatrisation takes place, producing stricture.

The functional symptoms are much as in the gonorrhœal form, the same pain, tenesmus, spermatorrhœa, and contamination of the urine with filaments being observed. Often a characteristic sign is sudden urethral hæmorrhage without apparent cause, frequently repeated without pain. Such a condition of hæmorrhage is rare in gonorrhœa, or, if present, is usually got at an initial period when pain is great and micturition difficult.

Another diagnostic point is that injection of silver nitrate, which gives amelioration in gonorrhœa, produces in tubercular urethritis no beneficial effects, but, on the contrary, stirs up the malady and provokes hæmorrhage and pain. Animal inoculation of the discharge may be of service in the diagnosis. Endoscopy is, of course, the most certain sign, giving a direct view of the condition, though definite primary tuberculosis can only be affirmed after careful examination per rectum and by the cystoscope, for other foci has proved negative.

The prognosis, as a rule, is good in true primary tubercular posterior urethritis, though in some cases secondary tubercular infections occur and produce more serious results. The most effective treatment is perineal prostatotomy, with division of the sphincter of Henle, which method gives relief to vesical tenesmus and spasm, and allows of local curetting or cauterisation. Possibly the simple admission of air during this operation is beneficial, as in the case of recovery after laparotomy in abdominal tuberculosis. General hygienic treatment is also adopted, but lavages and instillations into the urethra are contra-indicated.

Anterior tubercular urethritis, on the contrary, is never primary, but occurs secondary to previous infection in the bladder or prostate. The same conditions of congestion, granulations, and ulcerations are found. Pain on micturition is experienced, and this persisting after the act produces also false desires for micturition. Urethral hæmorrhages are not rare. Pyuria is constant, and there is also purulent urethral discharge more serous and more granular than that of gonorrhœa. Endoscopy clears the diagnosis. In addition, external urethral palpation may reveal tubercular nodules or abscesses, while, from the existence of lesions elsewhere, the general state of the patient is bad.

From the multiple character of the lesions also radical treatment is not indicated usually. Where abscesses exist these are incised, and in cases where the penis has become riddled by sinuses or abscess tracks, partial resection or perineal urethrostomy may be done. General treatment, in addition, is carried on.

Tubercular strictures are rare. They may occur at any part, but are usually met with in the bulbous or penile portions. They are unique, contrasting with the ordinary multiple gonorrhœal form, and, as a rule, are wide, hence may be overlooked. In some cases the stricture is due to cicatricial contraction of tubercular ulcers (*forme scléreuse*); in others, it may be due to a large tubercle imprisoned in the urethral wall (*forme noduluire*); while a third variety is due to hypertrophic tuberculosis (*forme hypertrophique et sténosante*). False strictures are caused by pressure from without, from abscess, cowperitis, or prostatitis.

Symptoms are usually delayed and slight from the laxity of the constriction, though sometimes the usual signs and symptoms of stricture are got, and, exceptionally, there may be incontinence of urine or retention. Exploratory catheterisation is indicated in a suspected case, and when the stricture follows a urethritis, with its special discharge mentioned above, tubercle is suspected. In old persons it may be confused with primary urethral epithelioma, which is also capable of producing stricture, though in epithelioma the discharge is often sanious and fœtid, and contains epithelial *débris*; also pain is very marked.

Before diagnosing tubercular stricture, gonorrhœa must be discounted, and clinical and experimental evidence of tubercle sought for. notably that of pulmonary signs and the serum and ophthalmo-reaction. Spontaneous cure is not got, though the evolution may be very slow. The prognosis is grave, from the facts that other tubercular manifestations are usually present, the constriction is sufficient to prevent drainage of urine infected with tubercle bacilli, and hence may originate other lesions; and also retention, extravasation, or rupture of the bladder even, may take place.

The treatment is usually gradual dilatation, urethrotomy, or excision. In severe cases with extensive genito-urinary tuberculosis, palliative means are adopted, such as perineal urethrostomy or suprapubic cystostomy.

—Spencer Mort.

DISEASES OF THE THROAT.

Examination of the Larynx.—Occasionally it is somewhat difficult, when operating with the ordinary laryngeal mirror, to get a good view of the interior of the larynx. Dr. Gleitsmann, of New York, has devised a laryngeal dilator, which consists of three rods of metal bent at the end at a right angle, and one can introduce this into the larynx and dilate the parts, so as to show the position of webs or adhesions. In this way the cutting of such structures is rendered more easy.

Dr. Gleitsmann, like many others, including Tuerck, Dr. von Schrotter, has recognised the occasional difficulty in elevating the epiglottis, and he has devised a self-lifting epiglottis elevator. He describes it as a cone-shaped needle, has a hole at its base for the thread, and a small neck in the middle, which prevents its slipping back after it has been pushed through the epiglottis and passed through the opening between two springy plates. When the plates are now moved forward, the epiglottis hangs on the thread, the needle, as well as the whole instrument, can be withdrawn, and the thread, with the epiglottis attached to it, be handed to an assistant, allowing the operator the free use of both hands.—John Macintyre.

Direct Examination of the Respiratory Passages.—When Killian first brought out his method of examining the trachea and bronchial tubes it was felt that a new era had begun, and that, at least in cases of foreign body in the upper respiratory tract and œsophagus, great progress would soon be made. Notwithstanding this fact, it is extremely difficult to realise how much has been done in the last five years by direct examination of these organs. Dr. Herman von Schrotter, as early as 1906, brought out his work, entitled *Klinik der Bronchoskopie*, and it was evident then, from the results which he obtained in the study of tuberculosis, syphilis, and carcinoma, that the use of the instrument was by no means limited to the detection of foreign

bodies. In every medical school much has been done, and, in Professor Killian's own clinique, Dr. Brünings has simplified the apparatus very much by adopting a very old idea, first of all practised by Stoerk, in having tubes half length which will slide inside of each other. Dr. Chevalier Jackson's instruments for the direct examination of the respiratory tract are well known, and he has been most successful. Of late he has pushed his work so far as to obtain excellent views of the stomach by means of the gastroscope. His recent work all confirms what he reported in his paper to the *Journal of the American Medical Association*, 26th October, 1907, vol. xlix, pp. 1425-1428.
—John Macintyre.

Direct Examination of the Larynx and the Upper End of the Œsophagus.—One would have thought that when the whole œsophagus and trachea could be examined by means of straight tubes, that it would have been comparatively easy to examine the upper end of the œsophagus or the lower end of the pharynx. Surgeons do not agree upon this point. For example, Dr. Mosher begins his paper by saying, "The exposure of the pyriform sinuses and of the upper end of the œsophagus. according to Jackson, is always easy. This has not been my experience. I have tried all the instruments which have been devised for the direct inspection of the larynx and of the upper end of the œsophagus, but have found no one instrument suited to all cases. The instrument which is successful most often is the tube spatula. The drawback to the use of this instrument, however, is that it gives a very restricted field."

Dr. Mosher has devised a special set of instruments whereby the back of the larynx, hypopharynx, sinus pyriformis, and the adjacent parts can be examined. He places the patient's head in the lateral position, so as to do away with the difficulty and tiresome holding of the patient's head in the extended position. His instrument is a combination of tongue depressor and mouth gag. It is made for use on the left side, so that the operator can have his right hand for the manipulation of instruments. There is no hood, so that the whole posterior wall of the pharynx is seen, and the operator's eye does not get the cramped feeling which comes from looking long through the tube spatula. The speculum obtains its leverage for the force necessary to hold the mouth open and to push the tongue forward by resting against the left upper bicuspid teeth. When one is used to the instrument, the force required to manipulate the speculum is not great. He states, "The more I use the instrument the more I find that proper manipulation, not force, is what gives a good view."

The special instruments which Dr. Mosher has devised are very practical, and, although the use of them necessitates a general anæsthetic, there can be no doubt the author's contribution to the subject is a very valuable one.
—John Macintyre.

Books, Pamphlets, &c., Received.

Operative Midwifery, by J. M. Munro Kerr, M.B., C.M.Glasg., F.F.P.S.G. With 294 illustrations in the text. London: Baillière, Tindall & Cox. 1908. (21s. net.)

Points of Practice in Maladies of the Heart (Lumleian Lectures at the Royal College of Physicians of London), by James Sawyer, Knt., M.D. Lond., F.R.C.P., F.R.S.Ed., F.S.A. Birmingham: Cornish Brothers, Ltd. 1908.

Thomas Linacre (Linacre Lecture, 1908, St. John's College, Cambridge), by William Osler, M.D., F.R.S. Cambridge: At the University Press. 1908. (2s. 6d. net.)

Our Baby: For Mothers and Nurses, by Mrs. J. Langton Hewer. Eleventh edition. Bristol: John Wright & Co. 1908. (1s. 6d.)

Medical Examination Questions set at the University of Edinburgh, &c., for several years. Edinburgh: John Currie. 1908. (2s.)

Estimation of the Renal Function in Urinary Surgery, by J. W. Thomson Walker, M.B., C.M. Edin., F.R.C.S. With 2 coloured and 7 black-and-white plates, 34 figures in the text, and 32 charts. London: Cassell & Company, Ltd. 1908.

The Extra Pharmacopœia of Martindale and Westcott. Revised by W. Harrison Martindale, Ph.D., F.C.S., and W. Wynn Westcott, M.B. Lond., D.P.H. Thirteenth edition. London: H. K. Lewis. 1908. (10s. 6d. net.)

Legal Responsibility of the Drunkard, by H. Norman Barnett, F.R.C.S., with an Introduction by Sir Andrew Reed, K.C.B., C.V.O. London: Baillière, Tindall & Cox. 1908. (2s. 6d. net.)

Your Child's Health: Medical Notes for Mothers and Teachers, School Nurses and Health Visitors, by John Grimshaw, M.D., B.S.Lond., D.P.H.Camb., M.R.C.S.Eng. London: J. & A. Churchill. 1908. (2s. 6d. net.)

Poisoning by Arseniuretted Hydrogen or Hydrogen Arsenide (with a record of 120 cases by different observers), by John Glaister, M.D. Edinburgh: E. & S. Livingstone. 1908. (5s. net.)

Medical Gynecology, by Samuel Willis Bandler, M.D. With original Illustrations. London: W. B. Saunders Company. 1908. (21s. net.)

Ophthalmic Surgery, by Dr. Josef Meller; the translation reviewed by Walter L. Pyle, A.M., M.D. With 118 original illustrations. London: Rebman Limited. 1908. (12s. 6d. net.)

The Sexual Disabilities of Man and their Treatment, by Arthur Cooper. London: H. K. Lewis. 1908. (4s. net.)

Clinical Bacteriology and Hæmatology for Practitioners, by W. D'Este Emery, M.D., B.Sc. Lond. Third edition. London: H. K. Lewis. 1908. (7s. 6d. net.)

Landmarks and Surface Markings of the Human Body, by Louis Bathe Rawling, M.B., B.C. Cantab., F.R.C.S. Eng. With 31 illustrations. Third edition. London: H. K. Lewis. 1908. (5s. net.)

The Prevention of Tuberculosis, by Arthur Newsholme, M.D., F.R.C.P. With 39 diagrams. London: Methuen & Co. 1908. (10s. 6d. net.)

Death and its Verification, by J. Brindley James, L.R.C.P.Ire., M.R.C.S.Eng. London: Rebman, Limited. 1908. (1s. net.)

Sprue and its Treatment, by W. Carnegie Brown, M.D., M.R.C.P. London: John Bale, Sons & Danielsson. 1908. (6s. net.)

How to Nurse the Patient: A Handbook on Nursing for the use of those in Charge of the Sick, including the Nursing of Infectious Diseases, Obstetric Nursing, and Infant Feeding. With illustrations. Edited by J. Cowan Wilson, M.B., C.M.Glasg., D.P.H.Camb. Glasgow: William Hodge & Co. 1908.

GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR THE FOUR WEEKS ENDING 15TH AUGUST, 1908.

	Week ending			
	July 25.	Aug. 1.	Aug. 8.	Aug. 15.
Mean temperature,	59·4°	58·2°	60·8°	56·8°
Mean range of temperature between day and night,	26·5°	23·9°	32·8°	29·0°
Number of days on which rain fell,	3	2	3	3
Amount of rainfall, ins.	0·09	0·06	0·08	0·56
Deaths registered,	256	218	210	250
Death-rates,	15·5	13·2	12·7	15·2
Zymotic death-rates,	1·2	1·0	1·0	1·2
Pulmonary death-rates,	3·7	2·5	2·7	2·9
Deaths—				
Under 1 year,	60	40	53	75
60 years and upwards,	52	48	44	37
Deaths from—				
Small-pox,	...	...	...	...
Measles,	1	1	3	3
Scarlet fever,	3	...	...	...
Diphtheria,	...	3	...	1
Whooping-cough,	16	11	11	13
Fever,	...	1	1	1
Cerebro-spinal fever,	1	2	1	1
Diarrhœa,	19	13	30	36
Croup and laryngitis,	...	...	...	...
Bronchitis, pneumonia, and pleurisy,	27	18	28	32
Cases reported—				
Small-pox,	...	...	...	...
Cerebro-spinal meningitis,	6	3	1	5
Diphtheria and membranous croup,	11	8	11	16
Erysipelas,	14	14	11	15
Scarlet fever,	30	21	36	23
Typhus fever,	...	...	...	...
Enteric fever,	9	9	9	23
Continued fever,	...	...	...	...
Puerperal fever,	5	6	5	...
Measles,*	32	37	20	31

* Measles not notifiable.

Sanitary Chambers,
Glasgow, *27th August, 1908.*

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ORIGINAL ARTICLES.

AN OBSTETRIC DIARY OF WILLIAM HUNTER, 1762–1765.

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(*Continued from* p. 177.)

Chapter II.

Dramatis Personæ.

Thus, abruptly, the diary ends, and, by refreshing our memories of the men and women who figure in it or in making their acquaintance for the first time, we begin, in the most orderly fashion, a review of its pages.

Place au dame. Precedence must be given, of course, to Queen Charlotte, the leading lady of the play, the heroine of the story. Daughter of Charles Louis, Duke of Mirow, second son of the Duke of Mecklenburg-Strelitz, she had been chosen by the Dowager Princess of Wales, mother of George III, as a suitable consort for the son who was not permitted to exercise any choice in an event fraught with such interest and importance to his future welfare. The commonly accepted history of this most unromantic wooing is that Lord Bute, instigated and aided by the Princess of Wales, commissioned a fellow-Scot, Colonel Græme, to quietly visit the inferior German courts and there to choose the future queen. In the course of this pious pilgrimage he arrived at Pyrmont, at which spa many visitors had gathered. After careful observation of the eligible ladies, he finally selected and recommended the young princess who was so obscure and unknown that, as Horace Walpole said, "till that hour perhaps not six men in England knew such a princess existed." The King, who, as is well known, would have placed Lady Sarah Lennox on the throne, had his courage been equal to his desires, was kept in complete ignorance of the secret proceedings, but he was so much under the control of his mother and Lord Bute that he stolidly accepted, without protest, the wife chosen for him. Accordingly, Lord Harcourt was despatched to Mecklenburg, where he formally carried through the preliminary ceremony of marriage by proxy. After its performance the journey to England was begun, and on 6th September, 1761, the royal yacht reached Harwich.

Two days later, the Princess arrived in London, and in a few hours afterwards she was married to the man whom she had met that day for the first time in her life. The wedding took place at 9 o'clock in the evening, and the presence of Lady Sarah Lennox as a bridesmaid must have lent a piquant zest to the thoughts of the cynics and the tongues of the gossips. The description of the Queen's personal appearance, given by Walpole and others, is not flattering. She was small, pale, and insignificant-looking, and, unfortunately, had no qualities of mind to counterbalance the want of beauty. But the Dowager Princess, a woman of autocratic temperament and ambitious to retain an influence over her son, did not ask for beauty, and, still less, for mental endowments in a daughter-in-law. The most fitting wife, therefore, appeared to have been discovered in this girl, 17 years of age, born and educated in the seclusion of a petty German duchy, speaking English hardly at all, and ignorant of court intrigues and social ambitions. Hunter's diary throws very little light upon her character, but there can be no doubt that had George III not been married to a woman sordid and selfish, narrow-minded and ignorant, and absolutely unfit for her queenly position, but to one who could have wisely counselled her unintelligent husband, able to read the signs of the times, and with determination and character strong enough to counteract the plottings of the Princess of Wales and her favourite, Bute, and thus to assist the great Pitt, there is a possibility, by no means remote, that the history of Britain—of the world—would read very differently to-day from what it does. The obstinate attempt to tax a protesting country, which inevitably created an inglorious and unjust war, might have been averted, and thus we would not have lost the most valuable colonies ever possessed by any nation.

George III at the date of his marriage was 23 years of age, and a year older when his eldest child was born in August, 1761. As is well known, his character was bigoted and illiberal, and his reactionary and despotic opinions might readily have created another Revolution. In mitigation of the sentence which posterity has passed upon him, there are, however, many circumstances to be taken into account. For example, those attending his birth and early education must be considered. On 3rd June, 1738, his mother had no expectation of a premature labour, and was walking in St. James's Park, but during the night she became ill, and in the early hours of the morning was delivered of a son and heir, who, it must be always remembered, was a seven months' child. In the course of the day he was so extremely feeble that he was not expected to survive, and late that night he was privately baptised. However, he gradually became stronger, and in a few weeks the public baptism took place at Norfolk House, St. James's Square, where he was born. His father and his grandfather (George II) had been quarrelling, as usual, and the King had driven his son along with his family from St. James's Palace a short time before the child's birth. "Palaces are very calm-looking things outside; but, within, except in very wise and happy, or very dull reigns, are pampered passions, and, too often, violent scenes." It seems clear to me that the disturbing prenatal influence of the domestic infelicity upon his mother's nervous system cannot be ignored in an analysis of the mental qualities of George III.

It must also be remembered that his father died in 1751 in his forty-fifth year, as Prince of Wales, his son being then only 13 years of age. He thus, later on, succeeded to the throne of his grandfather. These circumstances also account, as we shall see when we describe his mother's character, for a very great deal in George III's after-life and conduct..

In Hunter's narrative he makes two or three appearances in the *rôles* of husband and father, and one is willing to admit that as regards the question of bleeding he acted with wisdom and commonsense. The domestic side of his character is, indeed, acknowledged by all historians to have been perfectly irreproachable, and had his political wisdom been as faultless he would have handed down to posterity a reputation as great as that of his illustrious granddaughter, Victoria. But, unfortunately, he was both badly educated and naturally stupid, and, consequently, he was obstinate. He was avaricious, and unscrupulously treacherous and hypocritical in his dealings with his ministers. But to his squat and homely wife he was undoubtedly faithful. The Hannah Lightfoot and the Lady Sarah Lennox episodes occurred before his marriage, and no others took their places.

Fifteen children were born to the royal couple, and the diary records the birth of the three eldest. Naturally, most space is devoted to that of the first, who, a few days after his baptism, was created Prince of Wales, and, upon the death of his father in 1820, ascended the throne as George IV. His disloyal and unfilial conduct to his father and mother, his vindictive cruelty to his wife—one ought to say *wives*, for he was legally married to Mrs. Fitzherbert—his immorality, voluptuousness, extravagance, and selfishness, are matters of universal knowledge, and one fancies it must surely have been in bitter irony that he was dubbed "the first gentleman of Europe." So deeply did he alienate the sympathies and affections of his subjects that when, sixty-seven years after his birth, death compelled him to resign all earthly pleasures and honours, the tidings of his departure from the world into which he had been welcomed by the enthusiastic acclamations of the populace were received with indifference and even with relief.

The second child was, in later years, Duke of York, and, when Commander-in-Chief of the Army, he attained an unenviable notoriety by his unsuccessful generalship, especially in the disastrous campaign of 1799 in North Holland. Later, his name became a word of reproach, when it was clearly proved by a parliamentary enquiry that he had allowed his mistress, Mrs. Clarke, to receive large sums of money from those whose promotions he awarded or commissions he granted. He was obliged to resign his appointment. The third child was created Duke of Clarence, and after the death of his brother, George IV, became King as William IV. The less said about his career the better: it was as shameless and profligate as that of the worst of his brothers. One fact of historical importance is, that though, by his open and unabashed alliance with Mrs. Jordan, ten children were born to him, the eldest of whom he raised to the peerage as Earl of Munster, his subjects regarded it as providential that he left no legitimate descendant, the succession to the throne thus devolving upon his niece, Victoria, daughter of the Duke of Kent whose private life was never disreputable, and whose public career was of no importance.

This, however, not being a *chronique scandaleuse,* we can take our leave of George IV and his brothers with the remark that no one can deny that they dragged the name and fame of the monarchy so low in the mire, that at the death of William IV thousands of thoughtful men were almost convinced that this country was ripe for the establishment of a republic. Believers in monarchical government as an integral and necessary part of the British constitution can never be sufficiently grateful to Victoria for the purity of her court and the untarnished rectitude of her own life.

The Princess of Wales mentioned in the diary was, as has been indicated, the mother of the King. Before her marriage to Frederick Prince of Wales, in 1736, she had been Princess Augusta of Saxe-Gotha, and never having tasted the sweets of queenly power she maintained, as long as possible, an ascendancy over her son. As he had become heir-apparent to the throne in early boyhood, was dull and foolish all his life, married to a woman who disliked court and public life and was ignorant of British politics, his mother was able to exercise great influence over him, and thus indirectly to wield, with all the energy of her determined and imperious nature, the power she so well loved. But what did it profit her? She missed the best in life. She never gained the affection of her family or the people; in fact, it is no exaggeration to say that during her son's reign she was the most hated woman in the kingdom. These were rough days, and the mob shouted with delight as her funeral procession moved through the streets to Westminster Abbey. Horace Walpole, in summing up her character, gives us the opinion of an educated man, "Her own ambition, and the desire of making her son more powerful than the laws allowed, led her and him into disgraces, mortifications, humiliations." The verdict of later days, given more dispassionately, does not materially differ from that of Walpole.

In this diary, Hunter gives, probably unconsciously, a hint as to her character. On the day after the birth of the first child, this entry occurs—"Order: to let the Breast be his principal support, but to feed him twice a day, as had been the custom in the Princess of Wales' family. The Princess desired a little milk to be put into the Pap." So far, in this is seen only the natural interest of a woman in her first grandchild and in her inexperienced young daughter-in-law, although it is evident that even if Hunter wrote as if the "order" were his, he allowed himself to be very much influenced by the wishes of the Princess. However, if it had either been adhered to or changed at his direction, that could be allowed to pass, but three days later Hunter records that "we found the Pap was without milk, the Princess of Wales having said, as the child is well let there be no change." Evidently the Princess had neither regard to the physician's "order" nor deference to his opinion, accustomed as she was to follow the dictates of her own will, and to expect implicit obedience in all matters from those around her. There is not much, perhaps, in this little incident, but it also serves to indicate the scant respect with which practitioners of medicine were then regarded, for, nowadays, we can scarcely consider the possibility of even a Princess countermanding a doctor's orders or issuing her own in such a high-handed manner, and without remonstrance being made.

It may be reasonably argued that the members of the medical profession scarcely deserved, in Hunter's days, that a very respectful hearing should be given to their counsels, that their practice was founded upon superstition and empiricism, and that the great majority of them were not much in advance of the charlatans of the day as regards knowledge of the laws of health. Undoubtedly the truth of much of such an indictment must be admitted, so far as the rank and file of the profession are concerned. Fortunately we live in better times, and the improvement in our status is due chiefly to two causes—our more liberal general education and our more efficient technical training. These, again, in their turn have led to an increasing enlightenment of the public mind, which permits it to understand in ever-growing degree the aims and hopes of medicine as these are now scientifically pursued, and thus to appreciate the work of those who are endeavouring to carry out its principles at the bedsides of suffering men and women. The benefits which modern medicine and surgery are conferring are thus widened year by year by this reciprocal action. Straws show how the wind blows and a chance remark in William Hunter's diary, setting up a train of reflection, reveals some of the differences existing between medical practice and its practitioners then and now.

However, we must leave Royal personages and turn to a lady of lesser rank whose name occurs on two separate occasions—"We had some conversation with Lady Charlotte Finch about Mrs. Scott's going into the Garden or Park for air," and "We saw the Prince with Lady Charlotte Finch."

Lady Charlotte was second daughter of the Earl of Pomfret—a now extinct title—and she was married, as Lady Charlotte Fermor, in 1746 to the Hon. William Finch, Envoy in Sweden and Holland, brother of the eighth Earl of Winchilsea. She was appointed governess to the children of George III so long as they were in the nursery, and died in 1813, having had an only son, who afterwards became ninth Earl of Winchilsea. She is said to have been highly accomplished, and was much esteemed.

The members of the medical profession mentioned in the diary, three in number, are Mr. Cæsar Hawkins, Sir Edward Wilmot, and Dr. William Duncan.

Mr. Hawkins was born in 1711, and was therefore 51 years of age in the year of the birth of the future George IV. He was a grandson of the famous Colonel Cæsar Hawkins, who commanded a regiment of foot in the time of Charles I, and a son of another Cæsar Hawkins, a surgeon. In 1735 he became surgeon to St. George's Hospital, surgeon to the Prince of Wales and to one of the troops of Guards, and, in 1747, sergeant-surgeon to George II, a post which he also occupied in the next reign. In 1778 he was created a baronet, and he died in 1786 at the age of 75 years. He was considered to be a very dexterous operator in those pre-anæsthetic days, when dexterity and celerity in operating counted for so much, and he acquired a large practice at an early age. By "bleeding" alone he was reputed to earn £1,000 a year. He invented what was then known as a cutting gorget, but he left behind him no literary work. His portrait, painted by Hogarth, hangs in the hall of the Royal College of Surgeons of England, Lincoln's Inn Fields. The title is still in existence, its present holder being the Rev. Sir John Cæsar Hawkins of Kelston, Somerset, Canon of St. Albans.

Sir Edward Wilmot was the oldest of the court physicians at this time, as, having been born in 1693, he was 69 years of age in 1762. Educated at Cambridge, he graduated B.A. in 1714, and M.D. in 1725. He then settled in London, and having become F.R.C.P. in 1726, he laid a good foundation to worldly success by his marriage with Sarah Marsh, daughter of the celebrated Dr. Richard Mead, Physician-in-Ordinary to George II. Mead had a brilliant career of professional and literary reputation, and amassed a large fortune. Through his influence his son-in-law was appointed physician to St. Thomas's Hospital, and in a few years later Physician-in-Ordinary to the Queen. After her death he became Physician-in-Ordinary to George II, in 1740 Physician-General to the Forces, and in 1759 he was created a baronet. On the accession of George III he became one of his physicians, and soon after the date of this diary he retired from practice and withdrew from London, being then about 70 years of age. Until his death, at the great age of 94, he lived at Herringston, Dorsetshire. He was a man of good and ancient family, and the rank with which he was invested is held to-day by his descendant, Sir Ralph H. S. Wilmot, sixth baronet, who is married to a daughter of the Earl of Lauderdale.

Of Sir William Duncan I have not been able to gather much information. He was a Scot, and seems to have owed his success to Lord Bute, who used his power to such good purpose on behalf of himself, his family, and his countrymen. He became M.D. of St. Andrews in 1751, L.R.C.P. in 1756, and was appointed Physician-in-Ordinary to George III soon after his accession to the throne, at the time when Lord Bute was First Lord of the Treasury, and, it may be incidentally said, the most unpopular minister who had ever filled that exalted post. In another year or two Dr. Duncan married Lady Mary Tufton, daughter of the Earl of Thanet, in 1764 he was created a baronet, and he died in Naples in 1774, leaving no children. His title, therefore, became extinct. In the letters from Horace Walpole to George Montagu, which I read lately, I accidentally came across the following allusion to Duncan. Whether or not the T—— refers to Lady Mary Tufton I do not know, but probably it does. "I must tell you an admirable bon-mot of George Selwyn, though not a new one; when there was a malicious report that the eldest T—— was to marry Dr. Duncan, Selwyn said, 'How often will she repeat that line of Shakspeare,

'Wake Duncan with thy knocking; would thou couldst!'"

Nothing changes more with the passage of time than the standard by which wit or humour is judged. It is difficult for us in this year of grace to enter as fully as Walpole did into the enjoyment of this "admirable bon-mot," though it must be remembered that Selwyn was such an acknowledged wit that his name and good sayings were ever on his friends' lips and in their letters. When a reputation of that kind is once gained it is easily maintained.

In the diary, both Sir Edward Wilmot and Sir William Duncan make an appearance only on one occasion, and then as physicians in consultation with Dr. Hunter, when the Prince of Wales was 6 months old, and was suffering from a "considerable rash," which they "considered a symptom of Teeth," and for which they "hardly did anything." Their views on the etiology of the eruption would be scoffed at nowadays by the youthful medical sage steeped in bacteriological lore, but, nevertheless, the treatment was successful, and, so far as any patient is concerned, that is all that is necessary. These old-time doctors, like the members of the House of Lords, "did nothing in particular and did it very well," and the infant princeling became ultimately relieved of "the common scabby humour which attends teething." One is here irresistibly reminded of the reply of Molière to Louis XIV, when the King asked him, "What use do you make of your physician?" "We chat together, sire," said the poet, "he gives me his prescriptions; I never follow them, and so I get well."

Anyone who has studied, even superficially, medical men and manners in the eighteenth century must have been struck by the deep cleavage which existed between the lower and higher ranks of the profession. There was not much neutral tint, mostly it was either deep shadow or bright light. If the fates had been propitious and success came, the physician went to the top of the tree, where were the golden fruits and the sunshine; the apothecary in a poor district, on the other hand, grubbed round in the earth at the roots of the tree for the plainest of food. Varying the metaphor, we may say that at the one end of the social scale were the surgeon-apothecaries, most of whom wrung out a meagre and uncertain income in competition with the barbers, blacksmiths, midwives, and the various tribes of quacks. At the other end were the physicians, courtly, cultivated scholars for the most part, graduates generally of Oxford or Cambridge, but who were perhaps more at home in advising upon critical family matters, or in entertaining their patients by their wit and badinage, than in the exercise of their medical powers. They moved in the circles of fashion, beauty, and wit, they entered in some instances into matrimonial alliances with members of the titled aristocracy of England, they made very good incomes, and they showed their taste as collectors of books, coins, articles of vertu, and as lovers of poetry, music, painting, and statuary. They included in their ranks men like Sir Henry Holland, Sir Walter Farquhar, and Sir Henry Halford, the last of whom began his court career with George III and ended it with Victoria. He was, indeed, *ultimus Romanorum*, combining the characters of physicion, courtier, scholar, and country gentleman. His wife was a daughter of Lord St John of Bletsoe. Some of them rose to high honour outside of their profession, as, for example, Sir William Knighton, who, originally court physician, became in George IV's reign Keeper of the King's Privy Seal and Receiver of the Duchies of Lancaster and Cornwall, acting, in fact, as the King's private secretary. In our day this type is practically non-existent. The learned physician, courtly and polished in manner and a dignified man of affairs, turning off an epigram as readily as a quotation from Horace or Virgil, passed away not long after the age of the ample wig, black velvet coat, and gold-headed cane. Medical or surgical machines are manufactured nowadays, highly specialised, certainly, but able to move and think only in narrow and well-defined grooves.

It is time, however, to turn our attention to Dr. William Hunter, the writer of the diary, who was 44 years of age when, in 1762, he was appointed to attend Queen Charlotte. As is well known, he was born at Long Calderwood, East Kilbride, Lanarkshire, and in 1731 matriculated at Glasgow University, where he studied for five years in the arts classes with a view to entering the church. He abandoned this idea, and after leaving college he thought of the usual refuge of a stickit minister, and was an unsuccessful candidate for the position of schoolmaster in his native parish. Later on he made the acquaintance of William Cullen, then in practice in Hamilton, and became his assistant or partner, in the free and easy custom of the times without any legal qualification to practise medicine. With Cullen he remained three years, which must have counted for much in giving his mind its special bias, for Cullen was a man of science in an age of empiricism, and must have influenced his friend in those impressionable days of his young and plastic manhood. In order to master anatomy he then attended the lectures of Alexander Monro *primus* in Edinburgh University, his only academic medical training, afterwards gravitating to London in the year 1741. In the great city his career was one of almost uninterrupted success. Fortunate as he was in the friendships which he formed, endowed with energy, ability, and enthusiasm, and gifted with oratorical powers and graces of manners, he passed from one triumph to another until the climax was reached, when, as we have read, he was in a position to head a diary with the words, "I had the honour of making my first visit" (to the Queen). After the birth of the infant Prince he wrote to his friend Cullen, in somewhat involved and not easily analysed sentences, "I owe it to you, and thank you from my heart, for the great honour I now have, and have had for some time, though very few know anything about it—I mean, having the sole direction of Her Majesty's health as a child bearing lady." Hunter's honest pride is unmistakable and undisguised, and his gratitude to Cullen freely expressed. To us also there is a charm in the quaintness and old-world flavour of the phrase which he applies to the Queen.

After royalty had stamped him with its approval, Hunter enjoyed a large and lucrative practice as a physician and accoucheur, but his chief title to enduring fame rests on his great work on *The Anatomy of the Gravid Uterus*, and the strong support which he, following the lead of another Lanarkshire man, Smellie, gave to the reformation of the practice of midwifery in this country. His anatomical studies were indeed of the greatest importance in this connection, as they taught him the cardinal distinction between the old rule of thumb obstetrics of the midwife *régime* and what ought to be the modern scientific practice. He bent his energies on ensuring a more systematic study of anatomy, and he freely used his talents and his money in endeavouring to improve medical education generally, and thus raise the status of the profession.

Within the limits of this paper it is neither possible nor necessary to narrate Hunter's life in greater detail. His scientific attainments were as notable in their own way as those of his brother John, but his scholarly tastes acquired during his prolonged arts course, and the urbanity and polish of his manners went far to make him the *persona grata* in all circles which his brother never was. His attitude of mind—humble, as becomes a seeker after truth conscious of his limitations, and yet hopeful, as becomes a practical physician who must "exercise sagacity"—is well described in this sentence penned by him. "Time and long experience have taught us that we still are, and probably must long continue to be, very ignorant, and that in the study of the human body and of its diseases there will always be an extensive field for the exercise of sagacity."

William Hunter died, unmarried, in 1783, at the age of 65, and a lasting monument, which keeps his memory green, is the museum which is housed at Gilmorehill and bears his name.

There are still two personages whose names occur in the diary—Mrs. Scott, the wet nurse, and Mrs. Draper, the midwife. The former was "of Scottshall," and belonged by marriage to an old Scottish family, which had, however, "come down in the world." To her the office was very welcome. "She is much liked by our King and the Royal family," wrote Mrs. Montagu, her friend, "and I hope the scheme which I have forwarded to the utmost of my power will save an ancient, honourable family from ruin." It is to be hoped that these good wishes were fulfilled, though I find it difficult to understand how "an ancient, honourable family" could be saved from ruin by the wages of a wet nurse. The favour of a king or queen is, however, worth much, and probably Mrs. Scott thought more of future opportunities and favours to come than of immediate service and salary.

Mrs. Draper was one of the most celebrated midwives of the day, and this diary conclusively settles that it was she who attended Queen Charlotte. This is not a subject of engrossing international importance, but it may as well be stated that Huish, in his *Memoirs of George IV*, writes that "the Queen was delivered by Mrs. Stephen," and, further on, that Mrs. Draper was the Prince of Wales's nurse. It is impossible that Hunter could have made a mistake, and he does not even mention Mrs. Stephen's name. He is most explicit, especially with regard to the second birth, in detailing the services of Mrs. Draper to her Royal patient, with which we shall afterwards deal more fully.

With the midwife our list of personages—thirteen in all—is complete, but as an appendix to the chapter we may relate the amusing and amazing fact that an "establishment" was gravely granted to the heir when on the fifth day of his life he was created, by letters patent, Prince of Wales. This establishment consisted of the governess, Lady Charlotte Finch; deputy-governess, Mrs. Henrietta Coultworth; wet nurse, Mrs. Scott; day nurse, Mrs. Chapman; necessary woman, Mrs. Dodson; and rockers, Jane Simpson and Catherine Johnson. The nature of the duties of the first four of these officials is evident, but I can only surmise that the "necessary woman" was a jenny of all trades, a species of female "orra man," as we say in Scotland. Be that as it may, the work of the "rockers" is plainly indicated by their name. Nowadays, when the cradle is rapidly following the four-poster bed and the nightcap into the land of shades, it may be confidently asserted that the entourage of the modern royal baby does not number among its members a single "rocker."

CHAPTER III.

THE TOPOGRAPHY OF THE DIARY.

"Being called, I came to St. James's at ½ after 5 in the morning."

This, of course, refers to St. James's Palace, the one-time royal residence which has seen so much that lies at the heart of English history. Who, for example, can forget that within its walls Charles the First spent in prayer, meditation, and courageously calm preparation, the last three days of his life before he was borne across the Park to suffer execution at Whitehall? Its beginnings, however, were neither romantic nor noble, as it dates from the days of that royal robber, Henry VIII, who so strenuously upheld the twin doctrines of the divine rights of kings to do as they please, and the righteousness of might. He appropriated the fields belonging to the hospital for lepers dedicated to St. James, and upon or near the site of the hospital he erected a hunting lodge which was found convenient for hawking or coursing when Enfield or the breezy downs of Hampstead were too far off. Since these days the hunting lodge has grown considerably in size, and how much in importance may be judged by the fact that ever since the great fire at Whitehall in 1698 it has had the honour of giving its name to the royal court. The British Empire is to this day officially represented abroad in its name. That the name of the Saint, whose protection was invoked on behalf of an obscure leper hospital built in a then far-off marshy waste, would one day be synonymous with the court of a world-wide empire, could not have entered into the wildest dreams of the citizens of mediæval London. The gateway, which faces St. James's Street, designed by Holbein and built by command of Henry VIII, is still standing. The palace was never "palatial;" to this day it is almost apt to pass unnoticed by the careless tourist were it not for the pacing sentry.

"At that period she was taken ill at Chappell." This chapel at the palace still bears evidence of Tudor workmanship, and is as quaint and interesting and well worth endeavouring to see as any such building in London.

"The Garden or Park." Probably the former was the garden of the palace and the latter would be St. James's Park, the oldest, and from its historical associations, the most interesting of the London parks. It formerly stood in the same relation to the palace at Whitehall as the chase at Windsor does to the great castle in King Edward's days, and but for the Revolution of 1688, and the growth of the city, it might long have continued a royal preserve. After its hunting days were over it became a deer park, and later on was devoted more to ornithological purposes. Charles II built an aviary at one side of the park, and hence the name Birdcage Walk, which always puzzles the enquiring American. Now, as every London lover knows, although there is no aviary, the park is one of the most charming spots in the metropolis in which to study bird life.

"Her (the Queen's) own house in the Park." This was Buckingham House, built on a site originally occupied by mulberry gardens planted by James I, who had a design for the cultivation of silkworms. His grandson, Charles II, leased the ground to the Earl of Arlington, who erected upon it a house, named by him Arlington House, which, when purchased by the Duke of Buckingham, was re-christened, in 1703, Buckingham House. In 1761, Somerset House, on the banks of the Thames, not the present building of that name which was built between 1776 and 1786, but the Protector Somerset's old palace, which had for long been a dower house for the Queens of England, was converted into public offices, and in its place Buckingham House was purchased for £21,000 and settled upon Queen Charlotte. Hence the use of the phrases, "her own house," and "the Queen's House." It was built of red brick, and, in 1825, George IV, whose mania for building is notorious, pulled it down and erected the present inartistic pile known now as Buckingham Palace. To Buckingham House George III and the Queen retired as soon as possible from the more lively quarters of St. James's, which Horace Walpole declared "was not a prison straight enough." In a letter to George Montagu, written at Strawberry Hill, under the date 15th May, 1762, he says, "The King and Queen are settled for good at Buckingham House, and are stripping the other palaces to furnish it. In short, they have fetched pictures from Hampton Court, which indicates their never living there." Walpole's news was not quite correct, for, as we have seen, the eldest child was born in St. James's Palace so late as August, before their arrangements for removal had been entirely completed.

"Her Majesty had dined at Richmond," and "Between this Prince and her 3d son she had or was supposed to have a Miscarriage at Richmond." The house in which these events occurred is no longer in existence. At one time there was a Richmond Palace, which had many stirring historical associations, but it fell into decay, and now only traces remain. Its successor, known as Richmond Lodge, which stood in the old Deer Park beyond Kew Gardens, had not been long built before it was bought by George III's grandfather in 1721. When he became King, his wife, Queen Caroline, managed Sir Robert Walpole so adroitly, and he in turn brought his influence to bear so skilfully upon Parliament, that it bestowed the Lodge and other good things upon the lady. She maintained the gardens in magnificent style, built classical temples, and otherwise amused herself in spending part of the yearly income of £100,000 bestowed upon her by the subservient and corrupt Parliament.

George III, in the early years of his reign, frequently visited there, and the diary has told us that sometimes his young wife and he drove to the Lodge, dined there, and returned to town in the cool of the evening. In 1770, however, he demolished it along with all Queen Caroline's buildings, and converted the whole estate into pasture land.

Sir Walter Scott, in *The Heart of Mid-Lothian*, placed the scene of the meeting between Queen Caroline and Jeanie Deans at a time—1737—when the Queen was busily employed in embellishing the Lodge and its surroundings. With his not uncommon carelessness as to details he mistakes in placing it within the present park, and in making the Duke of Argyll approach it by the Hill. Half an hour's walk would be required to reach it from where the carriage stopped, and if the Duke's design were to gratify Jeanie's artistic sense, it signally failed, the view appealing most to her taste as "braw rich feeding for the cows." Scott does not describe the house, but of one of the walks, in which the interview occurred, he says it was "carpeted with the most verdant and close-shaven turf, which felt like velvet under their feet, and screened from the sun by the branches of the lofty elms which united over the path, and caused it to resemble, in the solemn obscurity of the light which they admitted, as well as from the range of columnar stems and intricate union of their arched branches, one of the narrow side aisles in an ancient Gothic cathedral."

What a revelation of the exquisite beauty of an English landscape must the glorious view from Richmond Hill have been to the young Queen. Little wonder is it in the Augusts of 1763 and 1765, fiery and sultry, as from Hunter's diary we know they were, that, oppressed by the heat and burdened by her physical condition, she sought every opportunity of forsaking London, for even a few hours, for the shady gardens and the green wooded parks round Richmond Lodge.

(To be continued.)

MULTIPLE TELANGIECTASES: THREE CASES IN ONE FAMILY.

BY ARTHUR J. BALLANTYNE, M.D.

THE following three cases of multiple telangiectases, occuring in one family, came recently under the writer's observation, and a short note of the conditions may not be without interest.

The family were Hollanders, of the respectable farming class, and were passing through Glasgow as emigrants from Zaandam, Holland, to the United States. Two sons already in the States completed the family.

The attention was first arrested by the appearance of minute red spots on the palpebral conjunctivæ of two of the party, and it was then noticed that similar, but larger and much more numerous, spots were to be found on the lips and other parts of the skin and mucous membranes. The close resemblance of these spots to those shown in the plates accompanying Dr. A. B. Kelly's paper on this subject[1] made the nature of the condition clear.

Details regarding the various members of the family follow:—

1. Francis van D., æt. 63. A thoroughly healthy-looking man. No spots were visible on his skin or mucous membranes, and no history of illness could be elicited.

2. Teuntje, his wife, æt. 56. Face and mucous membranes very pale. No emaciation, but looks somewhat old for her

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[1] *Glasgow Medical Journal*, 1906, vol. lxv, p. 411.

years. She has one small red spot on the conjunctiva of the right upper lid, several on the conjunctiva of each of the two lower lids, but none on the left upper lid. On each cheek there is an area covered with a sort of plexus of dilated capillaries, denser at some points than at others, but not forming actual nævoid spots. A somewhat similar condition is found at the centre of the dorsum of the tongue.

Several spots, small, round, and of bright red colour, are situated in and around the nostrils. On both upper and lower lips are a considerable number of spots of variable size and colour.

The conjunctival spots were at first sight taken for small hæmorrhages, but closer inspection showed that they were composed of little nævoid clusters of dilated vessels. Hæmorrhages are much more commonly found in the bulbar conjunctiva, and these were confined to the palpebral conjunctiva. They were of rounded or quadrangular form, of bright red colour, not more than 1 mm. in diameter, and caused no elevation of the surface.

The spots about the nose had the same characters, but were a shade larger.

The spots on the lips varied greatly in size and colour. The smaller ones formed little discreet round points, 1 mm. or less in diameter, of bright red colour, and with no elevation of the mucous membrane over them. The largest spots were as much as 3 mm. in diameter, of dark purplish colour, and formed distinct elevations, some being as large as a split pea. Between these two sizes there were many gradations. Some of the larger ones appeared to have originated by the coalescence of smaller ones.

No history could be elicited of any illness, and she was not aware of any losses of blood which might account for her pallor. Her husband attributed her bloodlessness simply to old age.

3. Marcellus, son, æt. 30. Now in America. Said to be healthy.

4. Gysbertje, daughter, æt. 26. A tall, well-built, and well-nourished young woman. She has a "pasty" complexion, but does not look quite so pale as her mother. Each cheek shows from ten to fifteen small round dark red spots, unaccompanied by any elevation of the skin surface, and the exposed surface of each lip presents about the same number of rather larger spots. Others, of irregular shape, occupy the tip of the tongue, and there are several on the roof of the mouth. The conjunctivæ of all the lids show several spots like those described

in the mother's case. One minute spot is seen under the nail of the fourth finger of the right hand.

The girl gave a history of rather frequent bleedings from the nose, and had been treated with iron for the past three years on account of "bloodlessness." There was no history of other losses of blood, or of illness of any kind. The father stated that she had only been bloodless for three years. Its onset was after their going to reside at Zaandam, and was supposed to be due to the marshy condition of the neighbourhood.

A partial examination of the blood was made in this case. From the skin puncture blood flowed very scantily, and was pale and watery in appearance. There was no tendency to continuation of the bleeding. Dr. A. W. Harrington kindly examined the films, and reports that they show evidence of a pretty marked secondary anæmia. Ring-staining is frequent and poikilocytosis well marked, with a tendency to the appearance of small corpuscles. No nucleated reds are present. Leucocytes are normal.

4. Antoni, son, æt. 25. Now in America. Is also said to be subject to bleedings from the nose, but to be otherwise healthy, and free from the spots described. The latter statement, however, may not be correct, for the spots found on the other members of the family seem to have attracted little or no attention, and may have escaped notice in this case.

5. Jan, son, æt. 22. A robust-looking young man, perhaps a little pale in the lips, but not noticeably anæmic. He has two small red spots on the tip of the nose, and about a dozen, large and small, on the inner surface of the lower lip. All round the tip of the tongue are a number of small red elevated spots, having the appearance of unduly vascular papillæ. In his case no history of illness, epistaxis, or other losses of blood could be discovered.

6. Gysbert, son, æt. 18. A healthy youth. No spots found, but the condition of the tongue similar to that in Jan.

7. Francis, son, æt. 13. Also healthy, and showing no spots, but the same condition of the tongue as in the two preceding cases.

None of the cases were specially liable to bleeding from cuts, and no accidental hæmorrhage from the nævoid spots had been noticed.

No other relatives were known to have a similar affection.

Remarks.—As the family could not be kept under observation, and the above record is necessarily incomplete, any discussion of the condition would be superfluous. It will be noticed, however, that we have here a further illustration of the interesting fact that the condition tends to affect several members of a family.

The involvement of the palpebral conjunctiva is also interesting, though not surprising. In none of the previously recorded cases was this observed; indeed, the conjunctiva does not seem to have been examined. In the above series of cases the mucous membranes of the throat and nose, the external auditory meatus, and the skin of the body and limbs were not examined. The examination was restricted to the skin of the head and neck and hands, and the visible mucous membranes.

Dr. Kelly's paper, already referred to, gives a very complete account of this interesting condition, and collates all the previously recorded cases. His second plate illustrates very well, though in a slightly exaggerated degree, the condition of the lips, &c., of Cases 2 and 4 of the above series.

THE CHOICE OF A GENERAL ANÆSTHETIC.[1]

By J. KING PATRICK, M.B., Ch.B.,

Honorary Anæsthetist and Instructor in Anæsthetics in the Wards of the Professor of Clinical Surgery, Glasgow Western Infirmary; late Senior Anæsthetist and Post-Graduate Lecturer on Anæsthetics, Glasgow Royal Infirmary; and Extra Honorary Anæsthetist to the Royal Samaritan Hospital for Women, Glasgow.

It must be admitted, I think, that the question of the choice of a general anæsthetic is not one to which the practitioner gives much attention. The reason for this is, I fancy, that he rarely administers any other general anæsthetic than chloroform, because he has not been taught the use of any other; and he has certainly been impressed, if educated at a Scottish medical school, with the vast superiority of chloroform over all other general anæsthetics. It is because I believe that the doctrine with reference to the superiority of chloroform is fundamentally unsound that I venture to bring this subject before you this evening. While I deprecate the attitude of Scottish teaching in this matter, I am bound to say that I have as little sympathy with the teaching of some London and American authorities who would have us believe that ether is the one and only general anæsthetic for routine use.

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[1] Read at a meeting of the Glasgow Eastern Medical Society held on 1st April, 1908.

This brings us at once to the point as to whether any of the agents in general use fulfil the requirements of an ideal routine anæsthetic. I am strongly of opinion that each of these agents, when subjected to the test of actual practice, falls very far short of the ideal, and it is a grave injustice to both administrator and patient to attempt to force one of them into a position which it is not fitted to occupy, whether that agent be chloroform or ether. The truth is that there is not, and I am afraid there never will be, a general anæsthetic which will meet the requirements of every case under all the various conditions of practice. Such an anæsthetic agent occupies the same place as the elixir of perpetual youth, or any other such nebulous agent in the list of things which have been sought after, but so far not attained. At the same time, chloroform is undoubtedly the anæsthetic agent we could least spare, and, if for no other reason than its comparative simplicity of administration and its portability, it will always remain the favourite anæsthetic with the practitioner. Each of the general anæsthetics in use has, I believe, a useful place to fill in the armamentarium of the skilled anæsthetist, and the man who can use them all, and has a good practical knowledge of their use and limitations, and of their various combinations and sequences, and who, moreover, can bring his judgment and experience to bear on the problem of which anæsthetic or combination of anæsthetics to use under given circumstances, having regard to the various factors which influence the choice of an anæsthetic, is the person who is doing the best for the patient and considering the best interests of the operator.

Before we can intelligently consider the question of the choice of a general anæsthetic, it will be necessary for us to enumerate the anæsthetic agents in general use both here and elsewhere, and to enquire into the methods of administration which have been adopted in different localities. In doing so we shall find that not only are the anæsthetics in general use fairly numerous, but also that the methods of administration are very diverse. This alone surely proclaims the fact that no anæsthetic agent has yet attained the proud position of sweeping all its competitors from the field, in spite of the enthusiastic partiality of certain schools and teachers for one much-belauded and over-rated anæsthetic.

The following are the agents more commonly employed for the production of general anæsthesia:—Chloroform, ether, ethyl chloride, ethyl bromide, nitrous oxide. In addition to these simple agents, the modern anæsthetist has also at his disposal mixtures, the better known being the A.C.E. mixture (consisting of one part of alcohol, two parts of chloroform, and three parts of ether), and *mixtures* of chloroform and ether in varying proportions, *e.g.*, two parts of chloroform and three parts of ether (C_2E_3), equal parts of chloroform and ether (C_1E_1), and one part of chloroform and two parts of ether (C_1E_2). Induction of anæsthesia may be undertaken by one agent while it is maintained by another. Thus it arises that anæsthetic *sequences* are frequently made use of. In the great majority of cases it is found convenient to induce anæsthesia by means of one of the more rapidly acting agents, such as nitrous oxide or ethyl chloride, and then to substitute ether or chloroform or a mixture.

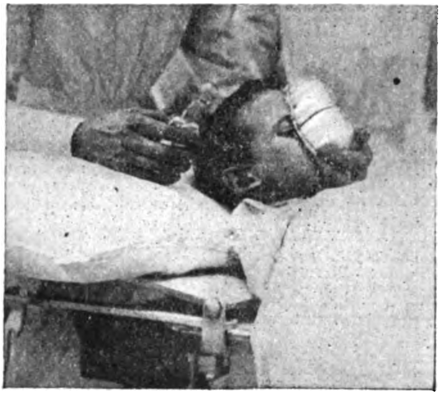

Fig. 1.

METHODS OF ADMINISTRATION.

Chloroform is more commonly given by the open method, the agent being administered drop by drop on a folded towel or some form of specially constructed mask. I am in the habit of using the "Milne" mask (Fig. 1), which was designed by the cutler to the Glasgow Royal Infirmary, and is made by Hilliard, of Glasgow. It consists of two wire cages between which is placed a single layer of lint or domette, and has a finger ring by which it may be readily held in position.

The open method of administering chloroform has been attacked by some as being unscientific and dangerous by reason of the fact that the administrator has no knowledge of the strength of chloroform vapour which he is giving to his patient. The labours of various investigators in this field have, within recent years, been productive of several forms of apparatus designed to meet this difficulty, the essential feature in them all being that they are capable of exhibiting to the patient known percentages of chloroform vapour. That the idea is by no means a new one is evidenced by the fact that in 1849—two years after Sir James Simpson introduced the use of chloroform—Snow[1] introduced an apparatus for regulating the percentage of chloroform vapour, his inhaler being designed to supply a 5 per cent vapour. Later, Clover,[2] Sansom,[3] Squire and Junker[4] worked on similar lines, and the inhaler of the last-named is still in use, and is of great service in operations about the nose, mouth, &c. Among the modern regulating inhalers are those of Dubois,[5] Levy,[6] Waller,[7] Vernon Harcourt,[8] and Harvey Hilliard.[9] The Dubois and Waller instruments are too expensive and cumbersome for clinical use, but are of considerable value in the physiological laboratory. The Vernon Harcourt and Harvey Hilliard instruments I have with me to-night, and I shall say a word or two about them. In both inhalers the inspirations of the patient are caused to pass over a surface of chloroform, from which a definite percentage of vapour is absorbed, and the expirations pass to the general atmosphere, being prevented from returning over the anæsthetic again by an arrangement of expiratory valves. In the Harcourt inhaler (Fig. 2) the percentage is regulated by means of an arm moving on a graduated arc, and vapours from 0·2 per cent to 2 per cent can be administered.

At first it was contended that this range of vapour strength was sufficient for all purposes, but this contention was not borne out in actual practice, and an increase tube was added to the apparatus so that 2·5 per cent and 3 per cent vapours could be given.

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[1] Snow, *On Anæsthetics*, p. 81.
[2] Clover, *Medical Times and Gazette*, 9th August, 1862.
[3] Sansom, *On Chloroform*, p. 127.
[4] Junker, *Medical Times and Gazette*, 1867, vol. ii, p. 590.
[5] Dubois, *Anæsthesie Physiologue*, 1894, p. 106 *et seq.*
[6] Levy, *Lancet*, 27th May, 1905.
[7] Waller, *Proc. Phys. Soc.*, 19th August, 1904.
[8] Vernon Harcourt, *British Medical Journal*, 18th July, 1903.
[9] Harvey Hilliard, *Lancet*, 29th July, 1905.

In using the Harcourt inhaler about 1½ oz. of chloroform is poured into the two-necked bottle, and two coloured glass beads are dropped into the liquid to indicate when the temperature of the chloroform is within the range 13° to 15° C. If the temperature is below 13° both the beads will float; if it is above 15° both will sink. In the former case the proportion of chloroform inhaled will be less than the pointer indicates; in the latter case it will be greater. As the tendency is towards reduction of temperature from evaporation of the chloroform, it is often necessary to immerse the chloroform bottle in warm water. It is contended that, "beginning with the pointer at 0·2 and moving it on towards the chloroform bottle at the rate of one division about every half minute up to 1·6 or 1·8 produces narcosis as quickly as desirable." My own experience with the Harcourt inhaler does not bear this statement out, and I am convinced that it is all but impossible to induce anæsthesia of a reasonable depth and in a reasonable time with it. Even in University College Hospital, London, where it is used constantly, I noticed that the induction was undertaken by means of gas and ether,

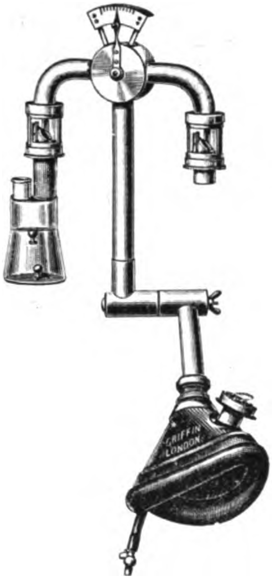

FIG. 2.

and in my own cases I always put the patient under by means of a mask in the ordinary way. After a little experience an average patient can be kept fairly well under with the Harcourt inhaler, and there is no doubt that a very satisfactory type of anæsthesia is obtainable. The patient is kept under with the expenditure of a minimum amount of anæsthetic, which he is getting in constant strength of vapour, and after-effects are undoubtedly less frequent.

With the Harvey Hilliard apparatus (Fig. 3) strengths of vapour up to 4·5 per cent can be obtained, and from a practical point of view it is certainly the more useful inhaler of the two. It can also be used as a regulating ether inhaler. My experience with this instrument has been quite satisfactory. It is possible with this inhaler to induce narcosis in from six to ten minutes. On the other hand, I have had several failures, in which I have had to abandon the use of the inhaler and employ a mask.

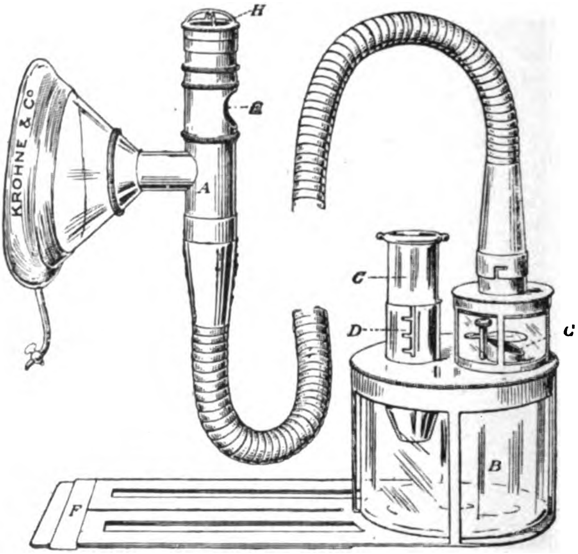

Fig. 3.

It will be evident that the percentages in any type of regulating inhaler, however scientifically accurate the instrument may be, can only be regarded as approximate, as they will of necessity be modified by many factors. It will be obvious that an ill-fitting face-piece, for example, which allows of the entrance of air at any point, will disturb the accuracy of the instrument. Similarly, the temperature of the theatre, agitation of the surface of the chloroform, the rate and depth of the respirations, &c., will all contribute to the same end.

While it is obviously a step in the right direction to attempt to exhibit to our patients known strengths of chloroform vapour, founded on accurate scientific data, there are undoubtedly serious drawbacks in all the regulating inhalers which have so far been introduced. I fancy that the factor which contributes more than any other to make the practical application of these theoretical principles a matter of difficulty is the difference in susceptibility manifested by different individuals to any anæsthetic agent. This we call idiosyncrasy, about which we know little or nothing, but the fact remains that human beings are not a set of automatons who react in a precisely similar way to different drugs, but are beings each with a distinct individuality, exhibiting differences in temperament, in physique, in habit; and so any attempt to administer a drug like chloroform by means allowing of little or no departure from rigid scientific principles must be doomed to failure in many cases. And this is precisely the experience of most anæsthetists with regard to dosimetric methods in the administration of chloroform. In addition, this method has the disadvantage that a somewhat elaborate apparatus must be watched, and the strict supervision of the patient, which is so essential when chloroform is being given, is apt to become a secondary consideration. This danger is too obvious to require further comment. It is also to be remembered that the current of air passing through the apparatus is dependent on the action of the patient's respiration, and this is apt to introduce an asphyxial element into the case, especially where such a tendency exists. While it must be admitted that the regulation of the vapour strength of chloroform within certain limits removes one very important cause of danger during chloroform narcosis, viz., vapour concentration, it must be borne in mind that such a method does not remove the risk of intercurrent asphyxia, which may arise from various causes, or the effect of shock, or many other sources of difficulty and danger which are so apt to complicate chloroform narcosis. It is therefore a delusion of a particularly dangerous kind to fancy that a patient who is receiving, say, 1½ or 2 per cent of chloroform vapour is absolutely safe. However low the percentage of vapour, and however accurately arrived at, the occurrence of an accompanying asphyxial condition introduces an element of danger at once, and this is a contingency which no regulating apparatus can eliminate. My own feeling about regulating inhalers is that there is no adequate compensation for the inherent disadvantages possessed by them all, and that the safety of the patient is not so greatly enhanced as to justify the use of a more or less cumbrous apparatus, which becomes very tedious to manipulate, and which is apt to take up a great deal of the anæsthetist's attention. I would not be inclined to use any type of regulating inhaler except in selected cases, and I am of opinion that those cases in which a closed method of giving an anæsthetic are contra-indicated are also unsuitable for a regulating chloroform inhaler. Patients suffering from dyspnœa from whatever cause, stout patients, and the florid and thick-necked type of individual, would come under this category.

The Junker inhaler differs from the regulating inhalers previously considered, in that the air is propelled by means of a hand bellows over the surface of the chloroform, and the vapour is delivered to the patient on a mask or through a tube. It is not possible by means of this apparatus to measure with any degree of exactitude the strength of vapour which the patient receives. This inhaler is particularly useful in cases where it is desired to keep up the administration of chloroform while the surgeon is operating in the region of the mouth, throat, nose, &c., and is of great service in such cases as cleft palate, hare-lip, excision of tongue, &c. If it be not employed in these cases the anæsthetist must of necessity interrupt the course of the operation from time to time to keep the patient under the influence of the anæsthetic. In several cases, by means of a tube held at the angle of the patient's mouth, so that a constant stream of chloroform vapour was being pumped into the patient's lungs, I was able to maintain a sufficiently deep anæsthesia to allow a case of cleft palate to be completed without a single interruption. Having had a large experience of the "intermittent" method of administration in similar cases, I was able to appreciate the great benefit of this method.

Ether may be administered by the open, semi-open, or closed methods. The *open method* has never been popular in this country, but is extensively used in America. Quite recently an attempt was made to popularise the open method of administration in England, and I shall put before you the principal points in Mr. Bellamy Gardner's[1] recent communication on the subject. He uses a wire mask, covered with ten layers of absorbent gauze, which rests on a face pad of several layers of gauze, made into a roll 14 inches long and 1 inch thick. The free ends are tied together and the mask applied. A bottle with a double-tubed stopper is used, and a large stock of ether is a *sine qua non.* The mask having been applied, the patient is directed to breathe regularly and slowly through the mouth. A few drops of ether are then allowed to fall on the mask, and the dropping is steadily continued until the patient goes under. The period of induction is given as six to seven minutes, and there is said to be hardly any struggling or excitement, and the vapour of ether is not resented. The amount of mucus is very slight as compared with that resulting from the use of a closed inhaler, and there is an absence of the cyanosis, laboured breathing, coughing, and retching which are apt to accompany the use of such an inhaler. It follows, of course, that the blood from the operation wound is less dark in colour and not so abundant. After-effects are reduced as compared with the closed method of administration, and post-anæsthetic vomiting is said to be reduced from 75 per cent to 32½ per cent (Weland and Osgood).[1] The chief drawback seems to be the large quantity of ether vapour which passes into the atmosphere, and the method is contraindicated in alcoholic subjects, malarial subjects, and those with a family history of insanity. I have not seen the necessity for giving ether by the open method *ab initio*, but there is no doubt that this method is of great use in cases where the depressant action of chloroform becomes manifest during the course of the anæsthesia, and my practice on such occasions is to cover the "Milne" mask with several layers of white gauze and maintain the anæsthesia by means of ether dropped on almost continuously. A marked improvement in the patient's condition quickly becomes manifest with respect to both respiration and pulse. The former from being shallow and almost inaudible becomes regular and audible; the latter shows marked improvement both in strength and rate. As a result the patient's colour changes from the pallor of chloroform to a healthy pink. This method is of great service when some operative procedure involving reflex respiratory spasm is in progress, as, for example, the severing of the prepuce in circumcision or the stretching of the anal sphincter in rectal operations. If it is decided for any reason to give chloroform in these cases my usual procedure is to get the patient well under the influence of that drug, and then, before the occurrence of the crucial part of the operation, to bring the patient under the influence of ether by the method described above. I have satisfied myself of the truth of Bellamy Gardner's[1] observation that ether "possesses a specific action in blunting, and in some cases preventing, the transmission of nerve stimuli more effectually than chloroform." In giving ether by the open method I prefer to induce narcosis by means of chloroform or C_2E_3 mixture, or by means of the ethyl chloride-ether sequence, putting the patient thoroughly under in each case, and then maintaining anæsthesia by means of ether dropped on the mask.

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[1] Bellamy Gardner, *British Medical Journal*, 18th January, 1908.

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[1] Weland and Osgood, *Annals of Surgery*, part 177, p. 460.

In certain cases there may be difficulty in maintaining a satisfactory degree of anæsthesia by means of the open method on account of the patient's physical development, alcoholic tendency, or other reason, and in these cases recourse may be had to the *semi-open method* of administration. When this method is employed some form of inhaler is used which limits, to some extent, the patient's air supply, such as Rendle's mask, Luke's modification of Blake's cone inhaler, McCardie's inhaler, &c.

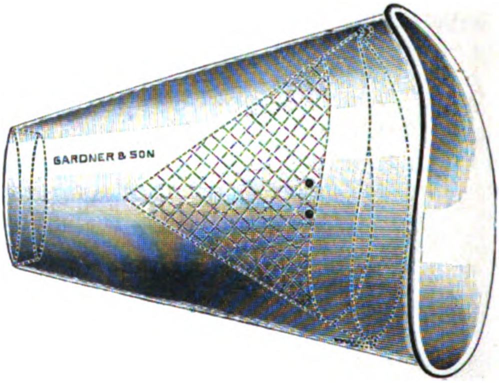

FIG. 4.

In Rendle's mask, which may be made of metal or celluloid, the end is perforated with a series of holes, and the concavity is filled by a sponge contained in a flannel bag. The sponge having been wrung out of hot water, an ounce or more of ether is poured on it. Luke's inhaler (Fig. 4) consists of a truncated pyriform cone of metal, inside which a second wire gauze cone is retained in place by a spring. A piece of domette bandage or gauze, about 1½ yard long and 1½ inch broad, is wrapped round the inner cone, and a piece of sponge with large pores may be placed in the upper aperture.

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[1] Bellamy Gardner, *British Medical Journal*, 6th July, 1907.

McCardie's inhaler (Fig. 5) is made of metal and is double-ended, each end being fitted with a face-piece of different size, so that it is equally adapted to children and adults. The central cylindrical portion of the inhaler contains a sponge on which the anæsthetic agent is poured.

The induction of ether anæsthesia by means of any of these inhalers is not a pleasant process for the patient, and is accomplished by holding the inhaler charged with ether at some distance from the patient's face and gradually bringing it nearer until the patient is sufficiently under the influence of the drug to permit of the mask being applied closely to the face. As induction can be accomplished quickly and with comfort by means of the ethyl chloride-ether sequence, the method described is best avoided. The administration of ether by the semi-open method is useful during the course of chloroform narcosis in precisely the same cases in which the open method is indicated, and may be useful where the latter method proves insufficient to keep the patient under.

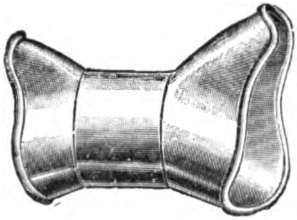

FIG. 5.

In the *closed method* the amount of atmospheric air allowed to the patient is strictly limited, and re-breathing takes place into a closed bag. This method is very largely employed in England. Porta of Pavia, and Smith of New York, are referred to as having used a bag in the administration of ether by Morgan of Dublin,[1] who was probably the first to use a closed method of administration in Great Britian. Morgan's paper was published in 1872. Five years later and, curiously enough, within a month of each other, descriptions appeared in the two leading English medical journals of Clover's[1] and Ormsby's[2] inhalers, which still remain the best inhalers for the administration of ether by the closed method. In Clover's inhaler the ether is contained in a reservoir, and by an ingenious arrangement more or less of the patient's respirations can be made to pass over the surface of ether, so that a graduated dosage is possible. In the Ormsby inhaler, on the other hand, the ether is poured on a sponge situated between the face-piece and the bag. Numerous modifications of both inhalers have been suggested from time to time, the most notable, perhaps, being Dr. Hewitt's modification of Clover's inhaler. Dr. Hewitt has increased the size of the bore with the object of lessening the initial asphyxia, and has introduced other minor improvements, and this modification is certainly the most perfect apparatus for the administration of ether by the closed method at present on the market. The disadvantages of any closed method are the necessity of delimiting the supply of oxygen, and the re-breathing the contents of the bag, containing as it does carbonic acid, exhaled organic matters, &c. In addition to this somewhat unhygienic condition of affairs there is also a tendency to cyanosis, excessive secretion of mucus, tumultous breathing, with the attendant "excursion" of the abdominal walls so embarrassing to the operator.

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[1] Morgan, *Medical Press and Circular*, 31st July, 1872.

Ethyl chloride and bromide may be considered together, as their sphere of usefulness and method of administration are practically identical. Although the anæsthetic properties of *chloride of ethyl* were discovered as early as 1847, and it was actually used on the human subject in the following year, it was not until within recent years that its use became general. In 1901 McCardie,[3] of Birmingham, who was the first to use it in this country, published his first cases, and in his paper collected the cases of Continental observers. These amounted to 2,500 cases with one death. The method of administration in vogue at this time was to spray the ethyl chloride on lint lining a mask fitted with expiratory and inspiratory valves, and with no bag attached. The type of anæsthesia obtainable by this method was very light, and of only 20 to 30 seconds' duration. The corneal reflex was not lost and there was no relaxation of the muscular system. In 1903,[4] McCardie adopted the closed method of administration with much better results, using an Ormsby inhaler. Since then this agent has been used many thousand times, and the market has been flooded with all manner of inhalers and brands of ethyl chloride. The inhaler which I generally employ for the administration of ethyl chloride is that known as the "Glasgow" inhaler (Fig 6), and made by Messrs. G. Gillies & Co. of that city.

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[1] Clover, *British Medical Journal*, 15th July, 1876.

[2] Ormsby, *Lancet*, 10th February, 1877.

[3] McCardie, *Lancet*, 9th March, 1901.

[4] McCardie, *Lancet*, 1903, vol. i, pp. 952 and 1198.

It consists of the bag and face-piece of an ordinary Clover's ether inhaler, with connecting angle piece, in the vertical portion of which there is a shutter which allows of the introduction of air without removal of the face-piece. At the distal end of the bag a stop-cock arrangement is fitted, to which a tube, graduated up to 10 c.c., is connected by means of a bayonet catch. The appropriate amount of the anæsthetic is sprayed into the graduated tube, which is then attached to the stop-cock.

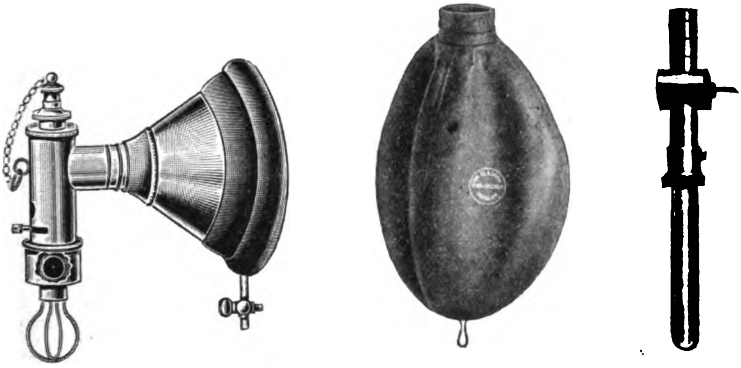

Fig. 6.

The patient having been taught to breathe regularly and freely into the bag, the ethyl chloride is allowed to run in. The vapour being heavy tends to lie in the bottom of the bag, and so at first the patient gets a weak vapour which at a later period can be made stronger by raising the end of the bag with the disengaged hand. The average dose of ethyl chloride is for strong muscular subjects, 7 c.c.; for men of average physique, 5 to 6 c.c.; for women, 4 c.c.; and for children, 2 to 3 c.c. McCardie gives the average induction period as fifty-two seconds, and the period of available anæsthesia as sixty-four seconds taken over a series of 197 cases of removal of tonsils and adenoids. Ethyl chloride may also be given by means of an Ormsby inhaler, the anæsthetic being sprayed directly into the bag, and the sponge, previously wrung out of hot water, inserted.

Bromide of ethyl, as far as my experience goes, does not seem to possess a single advantage over the chloride, and it undoubtedly has several serious drawbacks. It is an extremely unstable body, and if kept even for a relatively short time, will decompose and give rise to trouble when used. Moreover, it has a pungent and disagreeable taste. The method of administration is precisely similar to that employed with chloride of ethyl. Brown Kelly's[1] method is to spray the anæsthetic on folded lint, and then apply closely over the patient's mouth so as to exclude the entrance of air. This method has, it appears to me, nothing to commend it, and it is needlessly terrifying to the patient. To be suddenly deprived of access to the surrounding atmosphere, and to be invited to inhale in place of it a pungent and disagreeable vapour, is not a method of inducing anæsthesia which is likely to appeal to the average patient, and in the case of children is sufficient to leave an aftermath of fear and suspicion which may not be overcome for a considerable time.

The continuous administration of both the chloride and bromide of ethyl has been attempted, but so far without good results. It is almost impossible with either anæsthetic to keep up an even narcosis, and the method is expensive and nerve-wrecking in the extreme for the administrator. Barton,[2] of London, has devised a very ingenious apparatus for the continuous administration of ethyl chloride. It consists of a metal cylinder charged with ethyl chloride, to which is attached a length of india-rubber tubing. This is either passed directly into one nostril or attached to a suitable gag. Anæsthesia is induced in the usual way, and the metallic cylinder is then immersed in hot water in order to ensure that the ethyl chloride vapour generates freely, and to prevent the rapid cooling which takes place by evaporation. Barton has used this method in 200 cases lasting from three to twenty minutes, mostly in throat, nose, and dental cases. The cost of this method is rather a drawback, being about 1s. 6d. for every five minutes.

Nitrous oxide is by far the safest of all the general anæsthetics, but the resultant anæsthesia is so short (about thirty seconds) that its field of usefulness is very limited in general surgical work. Moreover, it entails a somewhat clumsy and weighty apparatus. In order to lengthen the period of available anæsthesia much ingenuity has been exercised in combining it with air and oxygen, and in devising means for its continuous administration, especially in prolonged dental cases. The administration of nitrous oxide combined with oxygen is probably almost without danger, but its drawbacks are: (1) a deep anæsthesia is not possible, certain reflexes always being present, which, except in the most trivial operations, are apt to hamper the operator; (2) the apparatus is complicated and far from portable, involving as it does three cylinders (two for N_2O and one for O), a large double bag, &c.; (3) the method is expensive and its proper administration requires a good deal of experience on the part of the administrator.

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[1] Brown Kelly, *British Medical Journal*, 30th August, 1902.

[2] Barton, *Lancet*, 8th July, 1905.

In spite of the fact that little or no preparation of the patient is required, and that after-effects are usually absent or extremely transient, the combination of nitrous oxide and oxygen is not one which is likely to prove popular with the practitioner.

Mixtures.—In spite of the theoretical objections which have been urged in certain quarters against mixtures of chloroform and ether I make bold to assert that as a practical anæsthetist I find them of very considerable value. Furthermore, I would plead for a more general use of them by practitioners, as I am convinced that in the hands of those who are only called upon to administer anæsthetics occasionally mixtures are safer than pure chloroform. If we could get an anæsthetic agent combining the virtues of chloroform with those of ether and possessing the shortcomings of neither we would have at our disposal an ideal anæsthetic. And it must be admitted at once that mixtures of chloroform and ether, in whatever proportions they are used, fall short of that ideal. At the same time I have no hesitation in affirming, as the result of my own experience, that they play a very important part in general surgical anæsthesia, and that in the hands of the inexperienced they are of great value.

The proportions of chloroform and ether in the mixtures in general use are as follows:—

1. C_2E_3, which is the A.C.E. mixture without the alcohol. Hewitt believes that the presence of the alcohol is of no advantage, and says that he gets better results with the C.E. than with the A.C.E. mixture. My own experience confirms the truth of this observation, and I have abandoned the use of the latter mixture.

2. C_1E_2 is useful in the case of weakly adults and children.

3. C_1E_1 is also useful in the case of children (Home Henderson).

Mixtures are usually given by means of one of the inhalers already described as suitable for the administration of ether by the semi-open method, and as a matter of fact they have a greater sphere of usefulness in this field than in the other. In the case of children and weakly adults the C.E. mixture may be given by the open method *ab initio*, more of the anæsthetic being used than in the case of chloroform. In other cases the induction is best undertaken by means of the ethyl chloride-ether sequence. The type of anæsthesia when a mixture is given is more satisfactory than with pure chloroform, the colour being better and the respirations regular and softly snoring, while the pulse is fuller and quicker than with chloroform. Except in the case of alcoholic subjects and those of more than average physique, there is generally little difficulty in keeping the patient under the influence of the C.E. mixture. As regards safety, mixtures occupy a place between chloroform and ether, and their more general use by the practitioner would be a source of safety to his patients and comfort to himself. No elaborate apparatus is required. A bottle of chloroform and one of ether, and a drop-bottle into which they can be poured in the required proportions immediately before the operation, together with one of the masks previously mentioned, complete the outfit. Harvey Hilliard[1] has recently suggested the use of a mixture of half a drachm of ethyl chloride to the ounce of chloroform given on the inside of a Skinner's mask covered with two layers of lint. The chief advantages he claims for this mixture are better colour, quicker and fuller pulse, and less after-effects than with chloroform. He also claims that consequent on a rise in blood-pressure depression of circulation from vasomotor paralysis never occurs. He finds it the best anæsthetic for the removal of tonsils and adenoids in young children.

Sequences.—Every case of general anæsthesia must be considered from the point of view of (1) induction and (2) the maintenance of the anæsthetic state. To my mind, chloroform in a very large number of cases is an unsuitable agent for inducing narcosis. With chloroform there is a tendency for this period to be prolonged and complicated by struggling and excitement. The patient tends to hold his breath for long periods, and a condition of cyanosis supervenes, with engorgement of the right side of the heart. If this condition has been marked, the risk of syncope early in the anæsthesia is much increased. The most dangerous period of chloroform narcosis is undoubtedly that of induction, and the great proportion of recorded fatalities have taken place within five to ten minutes from the commencement of the administration. I prefer, therefore, to induce anæsthesia with one of the more rapidly acting anæsthetics, and so get the period of induction over quickly and without excitement and struggling. For this purpose either ethyl chloride or nitrous oxide can be used, followed by ether, and changed, if necessary, to C.E. mixture or chloroform if the operation be a prolonged one. The use of ethyl chloride followed directly by chloroform is inadvisable, inasmuch as they are both cardiac depressants, and it is not easy to get a continuous or safe sequence. On the other hand, with ether interposed between the ethyl chloride and the chloroform the stimulant action of the former agent is manifest, and chloroform can be safely and easily substituted early in the course of the anæsthesia, if so desired. The nitrous oxide-ether sequence does not seem to me to possess any special advantage, and the apparatus necessary for its performance is somewhat clumsy and elaborate.

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[1] Harvey Hilliard, *Medical Magazine*, February, 1906.

Barton[1] has recently described a new sequence, viz., the C.E.-ethyl chloride-chloroform sequence, which is conducted in the following manner:—The patient is allowed to inhale C.E. mixture sprinkled on a mask for about a half to one minute; 5 c.c. is then sprayed on the mask, which is covered with a folded towel. As soon as the corneal reflex is lost the towel is removed and the anæsthesia is maintained by means of C.E. mixture or chloroform. Barton claims that by this method the patient is ready for the surgeon in two minutes.

THE VARIOUS ANÆSTHETICS CONTRASTED AND COMPARED.

Ethyl chloride, ethyl bromide, and nitrous oxide occupy a class by themselves, as, in spite of efforts to maintain more or less prolonged anæsthesia by their use, they are of service only in the case of short operative procedures. In the case of the chloride or the bromide of ethyl a period of one to two minutes represents the average duration of anæsthesia available, while with nitrous oxide only thirty seconds can be obtained, or combined with oxygen, forty or fifty seconds. Ethyl chloride is a convenient anæsthetic for the performance of such operations as removal of tonsils and adenoids, operations about region of nose, evacuation of abscesses, extraction of teeth and other short dental procedures, &c. It is not suitable for cases where complete muscular relaxation is desired, as spasm and rigidity of the muscles frequently attend its use. The use of any of these anæsthetics is contra-indicated in the case of patients suffering from dyspnœa from whatever cause arising, partial occlusion of the windpipe from external pressure, acute inflammatory conditions in the neck, enlarged thyroid, &c.

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[1] Barton, *Trans. of Soc. of Anæsthetists*, vol. viii, p. 92 *et seq.*

CHLOROFORM *VERSUS* ETHER.

This is rather a vexed question, and one which has led to a great deal of discussion resulting in the founding of two schools, each with a very considerable following. Let us consider very briefly the *pros* and *cons* of the question.

Chloroform has the following advantages:—

1. It is very portable, and requires no elaborate apparatus for its administration.

2. It is not unpleasant to inhale, and is not, as a rule, irritating to the respiratory tract.

3. It gives rise to a quiet anæsthesia, without the salivation, cyanosis, and laboured breathing which are apt to be accompaniments of ether narcosis, when accomplished by the closed method, at anyrate.

4. It is not inflammable, so that the actual cautery can be used in its vicinity without danger. The presence of a naked light, however, causes decomposition of chloroform, with the formation of substances having an irritating effect on the respiratory passages, including HCl, free chlorine, and carbonyl chloride ($COCl_2$).

Chloroform has the following objections:—

1. It has a much higher death-rate than ether, and the fatalities reported occurred very largely among healthy persons of all ages who had been brought under the influence of the anæsthetic for trivial operations, *e.g.*, passive movements of joints, reduction of dislocations, extraction of teeth, &c. The ether fatalities, on the other hand, have occurred, for the most part, in patients suffering from a "pre-existing morbid state" (Hewitt). In other words, the deaths in the case of chloroform have been, in the majority of instances, due to the anæsthetic, and in the case of ether to morbid conditions in the patient.

2. The tendency to heart failure, which is brought about by a steady and progressive fall in blood-pressure, and which may manifest itself at any time during the administration.

No amount of experience on the part of the administrator can entirely eliminate this danger.

3. The tendency to sudden diminution of blood pressure, a condition to which Hewitt gives the name "circulatory shock."

4. The tendency to cause degenerative changes in the cells of certain organs, *e.g.*, liver cells, kidney cells, heart muscle fibres, &c. This condition has been fully described by Stiles and MacDonald[1] and others under the name of delayed chloroform poisoning. It is said to be specially liable to occur in children, and to have caused death several days after the administration.

Ether has the following advantages:—

1. It is safer than chloroform. The statistics which have been published from time to time are undoubtedly open to certain fallacies, but the general deduction to be made from them is that ether is five or six times safer than chloroform, and this coincides pretty closely with the results of experimental work, which proves that chloroform is six times more lethal than ether.

2. Ether is a cardiac stimulant, and its use is not attended by the occurrence of the vaso-motor phenomena which so often give rise to danger under chloroform.

3. There is a considerable period of analgesia after the anæsthetic condition has passed off.

4. In short operations, such as dental extractions, requiring several minutes for their performance, the patient can be "charged up" with ether.

Ether has the following objections:—

1. A more or less bulky apparatus is required, and a large quantity of the anæsthetic must be carried.

2. The administration requires more skill and experience on the part of the anæsthetist than in the case of chloroform.

3. The vapour of ether is distinctly unpleasant and irritating, and when the closed method of administration is employed there is limitation of air supply and re-breathing of respiratory products, which is not a hygienic process and gives rise to unpleasant after-effects in the way of headache, &c.

4. Ether is said to lead to bronchitis, broncho-pneumonia, and other affections of the air-passages and lungs. If, however, the temperature of the operating room be kept at from 65° to 70° F., and adequate care is taken to protect against

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[1] Stiles and MacDonald, *Scottish Med. and Surg. Journal*, August, 1904.

chill, the danger of pulmonary complications is somewhat remote; provided always that the anæsthetic has been administered with a reasonable amount of skill and care. On the other hand, pulmonary complications are by no means unknown after chloroform anæsthesia.

Hewitt says "when ether is administered to appropriate cases, the danger of such results is infinitesimal." There is a tendency, I think, especially in hospital practice, to expose the patients to an unnecessary degree. When we consider that the anæsthetic causes a fall in temperature *per se*, to which must be added the fall caused by the exposure of skin surfaces and internal viscera, it will be evident that the exposure of the patient should be reduced to the minimum. The result of such exposure must always be increase of shock and tendency to pulmonary complications.

As regards *after-effects*, sickness is certainly more common after ether than after chloroform, but it is, as a rule, more transient and less distressing. In the majority of cases it ceases when the patient gets rid of the excess of mucus which lodges in the upper air-passages. The after-taste and odour which clings to the breath of patients who have had ether are often bitterly complained of.

The choice of a general anæsthetic is influenced by the following factors:—

1. The safety of the patient.
2. The convenience of the operator.
3. The condition of the patient.
4. The nature of the surgical procedure.

It is only after an intelligent consideration of these factors that the appropriate anæsthetic to use in each case can be arrived at. The physician who treats all his cases of pneumonia or enteric fever empirically is not likely to get the same results as he who treats each case on its own merits, recognising that each case presents a complete clinical study, influenced as it is by the idiosyncrasy of the patient. But when the question of the administration of a general anæsthetic is under consideration, the average practitioner is content to be guided solely by "rule of thumb." And yet, as Dr. Hewitt[1] puts it, "Is there not just as great a scope for professional skill and judgment when the respiratory, the circulatory, and the nervous functions of a patient are being profoundly modified by a general anæsthetic as there is during enteric fever or some other ailment, for which the services of experienced physicians are generally regarded as essential."

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[1] Hewitt, *Anæsthetics and their Administration*, third edition, 1907, p. vii.

It will be admitted at once that the first and most important factor to consider is the *safety of the patient*, and while ether is said to be the safer anæsthetic, it is only so in suitable cases. The safest anæsthetic for any particular case is the agent which is most appropriate to that case, having regard to all the circumstances. In one case it may be chloroform, in another ether, and in a third a judicious combination of both, either in mixture or sequence.

The convenience of the operator.—The question of the posture which is found to be most convenient for the operation will have a considerable influence on the choice of an anæsthetic. In the prone or semi-prone position ether is not a convenient anæsthetic to administer. In the sitting-up posture chloroform is contra-indicated owing to the risk of sudden syncope, but any of the other anæsthetics may be used with perfect safety in this position. In abdominal operations the tumultuous breathing which is apt to be an accompaniment of ether narcosis is inconvenient and embarrassing to the operator, and may be obviated by the use of chloroform or mixtures.

The condition of the patient is of considerable importance, and includes such considerations as age, temperament, habits of life, and the state of the various systems.

Age.—One hears the opinion frequently expressed that children take chloroform well, and almost without risk, as compared with adults, but my experience in the out-door department of the Children's Hospital and elsewhere, based on considerably over 2,000 administrations of chloroform and mixtures, does not by any means bear this statement out. Nor do I find myself able to subscribe to the teaching that chloroform should be given "under 6 and over 60." My experience is that children are easily put under the influence of chloroform, but it is frequently very difficult to determine at what stage of anæsthesia they have arrived at a given time. Moreover, the safety zone under chloroform is much restricted as compared with adults, and consequently the passage into the stage of danger is easily compassed. It is true, of course, that as the circulatory and respiratory organs in young children are generally unimpaired, and are certainly free from degenerative changes, remedial measures, when difficulties arise, are very often successful. Children are particularly susceptible to shock, and under prolonged and serious operations under chloroform are prone to exhibit very marked signs of circulatory depression, with marked pallor, and almost imperceptible pulse, which is quickly followed by depression, and, finally, cessation of respiration. Dr. Home Henderson[1] has tried various anæsthetics and mixtures in the Children's Hospital, and finds equal parts of chloroform and ether most satisfactory, with an increased proportion of ether if the operation be severe or the child weakly. It is given in the same way as chloroform, and has the advantage that no elaborate and, to children, terrifying, apparatus is required.

Luke recommends the use of ether by the open method in children under 5 years of age. From my own experience I can testify to the value of the stimulant action of the ether in mixtures when administered to children and old persons. I find the C_1E_2 mixture of great service in the case of children, and since employing it I have seen very few cases of circulatory shock, a condition very prone to occur when pure chloroform is used.

Habits of life.—Persons addicted to the use of alcohol are notoriously bad subjects for a general anæsthetic. With chloroform such subjects are apt to give rise to a great deal of trouble during induction by reason of marked excitement with struggling and shouting. The period of induction is often unduly prolonged, and considerable engorgement of the right side of the heart results. In such patients induction is best undertaken by means of chloride of ethyl, which cuts short the period of induction, and is, as a rule, unaccompanied by excitement. Ether is of very little use in these cases.

Heavy smokers are also troublesome subjects, inasmuch as they have frequently a very irritable condition of the pharynx and larynx, causing persistent and troublesome coughing during induction. They have also frequently marked development of the muscles of the floor of the mouth, jaws, and neck, which may be the cause of troublesome spasms during anæsthesia.

General physique.—Patients of poor physique and those suffering from anæmia take a general anæsthetic well, and are more easily kept under its influence than the more robust. Plethoric patients with florid complexions and persons of good muscular development, with thick necks, take any general anæsthetic badly, and are certainly not to be regarded as good ether subjects. Such patients bear the limitation of air supply necessary when a closed method is used very badly, and manifest a marked tendency to cyanosis and excessive salivation when a closed inhaler is used. Stout patients are also bad subjects, especially for ether. In all these cases I find the C_2E_3 mixture of great service.

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[1] Home Henderson, *Trans. of Med.-Chir. Soc. of Glas.*, vol. iv, p. 341.

It is obviously impossible in the time at my disposal to enter into consideration of the influence of the state of the various systems on the choice of a general anæsthetic. Briefly, however, it may be stated that ether is contra-indicated in the case of bronchitis and affections of the air-passages generally, atheromatous conditions of the arteries, dyspnœa arising from any cause, aneurysm, and renal disease with albuminuria. In valvular disease of the heart, provided compensation is adequate, the risk of a general anæsthetic is not increased. In all these cases chloroform or C_2E_3 mixture, with free supply of air, give the best results.

The remaining factor to be considered is the *nature of the surgical procedure,* and in this connection I wish to consider, very shortly, the following:—

I. Dental cases.
II. Rectal cases.
III. Abdominal operations.
IV. Throat and nose operations.

I. It is not sufficiently recognised, I think, that chloroform is not a suitable general anæsthetic in *dental cases.* It is unsuitable for the following reasons:—

1. The patient cannot be put in the sitting-up posture, which is the most convenient for the operator.

2. The period of anæsthesia is short as compared with that of ether, and there is no period of analgesia. Repeated administration of chloroform is therefore necessary.

3. There appears to be a special tendency for syncope to occur with chloroform in dental work. It is probably reflex in character, and somewhat analagous to that which occurs during such procedures as stretching the anal sphincter, &c. In addition, there is the risk arising from the inevitable depression of the lower jaw, which forces back the base of the tongue and gives rise to a condition of asphyxia from occlusion of the upper air-way. The result is that not only is there mechanical interference with respiration, but there is also locking up of chloroform vapour in the lungs, a state of affairs the danger of which is perhaps not clearly enough recognised.

Cases may occasionally arise in which ether is contra-indicated, when the C_2E_3 mixture should be given carefully, and every precaution taken to guard against the occurrence of syncope.

In administering ether in dental cases, the patient, having previously loosened all tight-fitting clothing (collars, corsets,

&c.), is seated in the dental chair in the most suitable position for the operator. Ether is then given, preceded by ethyl chloride or nitrous oxide, by means of a Clover's inhaler. The ether anæsthesia is pushed so that the patient is thoroughly saturated with ether vapour, this process occupying about seven to ten minutes. At the end of that time the inhaler is quickly removed, and a period of available anæsthesia of from five to six minutes is usually obtained. The period of analgesia which follows may also be taken advantage of. If this period be insufficient, the inhaler can be easily and safely re-applied. The after-effects soon pass off, but will, as a rule, be more pronounced if a second application of the inhaler has been made. In the very large majority of cases, if the anæsthesia is deep enough and the operator expert, a single application of the inhaler suffices. The apparatus required is not elaborate, and the technique is easily learned. Personally, I have not given chloroform in dental cases for several years, and have never seen any trouble with ether. Luke, in his *Anæsthesia in Dental Surgery*, quotes the figures given by Hewitt with reference to the death-rate under chloroform in dental cases. Hewitt found that in Scotland, where chloroform is very commonly used in dental work, the ratio between the number of dental anæsthetic fatalities occurring between 1880 and 1894 inclusive and the population is about four times higher than the ratio for England and Wales (excluding London), where chloroform is much less used for anæsthetic purposes, and about eight times higher than the ratio in London itself, in which city chloroform is practically never used for dental extractions.

In the absence of coroner's inquests in Scotland it is possible that many fatal cases are not made known, and the proportion of deaths is in all probability higher than the figures given by Dr. Hewitt.

In an analysis of twenty-seven of the cases collected by Hewitt, giving fairly full particulars of each, the striking points are that the deaths have occurred for the most part in young and healthy adults, the ages ranging from 8 to 39 years, and that the cause of death in each case was sudden syncope, and in the majority of cases with a light anæsthesia. In the light of these facts it behoves the practitioner who is in the habit of giving chloroform in dental cases to consider his position carefully, and the patient who confides himself to his care for this operation of expediency is entitled to expect that every precaution is taken to minimise the risk of the anæsthetic.

II. In *rectal cases*, which, with dental cases, are notorious as contributors to the chloroform death-rate, ether should also be employed. This is particularly the case in operations involving stretching of the anal sphincter. Under chloroform this procedure is the cause of a reflex spasm of the larynx, giving rise to the "crowing" inspirations so familiar in these cases. In addition, there is often an alarming fall in blood pressure of reflex origin, and the patient becomes extremely pale and pulseless, and may quickly die, even when methods of restoration are promptly applied. Under ether, on the other hand, little or no reflex trouble arises, and the safety of the patient and the comfort of the anæsthetist are both considerably enhanced.

III. In *abdominal operations* the anæsthetist must take into consideration the convenience of the operator, and most surgeons, in Scotland at least, object to the somewhat pronounced "excursion" of the abdominal parietes under ether. One must also consider the tendency to cough after an ether administration, which puts a strain on the wound, and also the fact that after abdominal operations there is a greater liability for bronchitis to occur than with other operations. Armstrong[1] gives some statistics on this point, which go to prove that in those ether cases which were followed by bronchitis, abdominal cases bulked very largely. He gives the following reasons for the special liability of abdominal cases to be followed by ether bronchitis:—

1. Any mucus lying in the bronchial tubes is with difficulty expectorated for hours afterwards.

2. The pain caused by divided muscles and suture line whenever an attempt is made to cough may readily favour the remaining in the bronchial tubes of more or less secretion.

Personally, although I have administered ether for abdominal operations in a considerable number of cases, I prefer chloroform or C_2E_3 mixture. In operations involving manipulation of internal viscera, especially in proximity to the sympathetic plexuses, which are apt to be accompanied by a considerable amount of shock, ether should be used freely by the open method during the manipulation, or the C_2E_3 mixture should be employed. I would strongly recommend the routine use of ¼ grain of morphia, given about half an hour prior to the operation, in all abdominal cases, whether the anæsthetic used be chloroform or ether.

IV. The administration of anæsthetics in operations about the *throat and nose* constitutes a very important and highly specialised branch of the subject, and I cannot do more than briefly touch on it to-night. For the removal of tonsils and adenoids the choice of the anæsthetic must be left entirely in the hands of the operator, and the anæsthetic used will depend on the rapidity with which the operation is performed and the posture of the patient preferred by the surgeon. In cases where the operator is expert, and where the sitting-up posture is desired, ethyl chloride or ethyl bromide may be given. I have already described the methods of administration, and whichever is adopted the induction generally occupies from forty-five to sixty seconds, when slight snoring, fixity of the eyeballs, and loss of conjunctival reflex proclaim full anæsthesia.

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[1] Armstrong, *Brit. Med. Journ.*, 19th May, 1906.

When ethyl chloride is used it is advisable to insert a dental prop before commencing the administration, otherwise much valuable time may be lost in attempting to insert the gag owing to the spasm of the muscles of the lower jaw which commonly occurs under that anæsthetic. The available anæsthesia is from one and a half to two minutes. When the operator prefers to operate deliberately, and is content with the recumbent posture, chloroform should be used. Only a moderately light degree of anæsthesia should be aimed at, as there is a liability for blood and mucus to enter the trachea and give rise to trouble if the anæsthesia be pushed so far that the swallowing reflex is abolished.

CONCLUSIONS.

The choice of a general anæsthetic is a question to which too little attention is given, and it is impossible in the widely varying conditions met with in practice to use one anæsthetic only to the exclusion of all others. Such a procedure is unscientific, and by no means devoid of danger.

For induction, ethyl chloride or nitrous oxide followed by ether is to be preferred, followed in turn by chloroform or a mixture of chloroform and ether if the operation be prolonged. I do not favour the use of ether by the closed method for operations occupying more than fifteen to twenty minutes.

Mixtures of chloroform and ether are not used as freely as they might be, and are preferable to pure chloroform in very many cases, especially in the hands of the inexperienced.

In dental and rectal cases chloroform is in the very large proportion of cases contra-indicated.

I have endeavoured to put before you some points in general anæsthesia which have interested me, and some facts which have been borne in upon me during the last five or six years, during which time I have had rather exceptional opportunities of studying the question. I am conscious that I have performed my task in an imperfect manner, but if I have been able to excite your interest in this important, but very frequently neglected, question, I have not laboured in vain.

A CASE OF FACIAL PARALYSIS, WITH REMARKS ON SURGICAL TREATMENT OF THIS AFFECTION.

BY CHARLES GREENE CUMSTON, M.D., BOSTON, MASS.

ANASTOMOSES of the peripheral end of the facial nerve with the spinal accessory or hypoglossal are two operative procedures which have been employed for the radical cure of facial paralysis. The facial nerve having been injured, either by traumatism or by a suppurative process of the middle ear, the interference of choice for its repair, if this were possible, would be a suture of the peripheral end of the nerve with its central end. But to find both ends of the facial nerve in its passage through the petrous bone, and to bring the two ends together in the interior of this bone, must be considered as an operation materially impossible. In man, as in animals, anastomosis between the facial and spinal nerves has given satisfactory results. Apparently always successful in dogs, when the nerves operated on were not the seat of degeneration, the results in man, although less brilliant, have nevertheless been fair. Facial paralysis may consequently enter the domain of surgery. The perfect freedom of the operation from danger, its easy accomplishment, and the small disturbance that it may produce are all in favour of its being undertaken in certain cases.

J. M., a travelling salesman, 37 years of age, was operated on for mastoid trouble, in a Western city, during the latter part of February, 1905. Four days following the operation all the phenomena of paralysis of the corresponding facial nerve became manifest. After a few weeks, he having perfectly recovered from the operation, medical treatment was instituted for the paralysis. The treatment having been persisted in for three months without success, the patient, during his stay in town, applied to me for advice as to the possibility of remedying the condition.

Upon careful examination the paralysis was found to be complete. The incision for the mastoid operation was in perfect condition. Electrical examination of the muscles showed an evident reaction of degeneration. It was hoped, however, that the process had not gone beyond the possibility of an improvement by surgical interference, and anastomosis between the facial and hypoglossal nerves was advised.

The operation was performed on 13th May, 1905, the following technique being carried out:—The patient's head was placed on a cushion, with the face turned away from the side of the operation. An incision 12 centimetres long was commenced at the base of the mastoid apophysis and carried down along the anterior border of the sterno-mastoid muscle. The subcutaneous tissue, quite thick in this region, was then incised and the mastoid apophysis was denuded over its anterior aspect, and, in order to give a freer operative field, the sterno-mastoid muscle was dissected up at its insertion. The hypoglossal was then sought for just above the great cornu of the hyoid bone. A ligature was passed under it, and it was then isolated by a careful dissection. I preferred searching for the nerve at the above-named point rather than to look for it at the upper part of the incision, because at the transverse apophysis of the atlas the spinal accessory, hypoglossal, and pneumogastric nerves, and the internal carotid and internal jugular vessels are closely related to each other, and, therefore, there is a little more risk at this point. After freely dissecting out the hypoglossal it was split, and the facial nerve was then implanted and the anastomosis readily accomplished. The sterno-mastoid was then stitched to its insertion, and the wound closed without drainage.

Recovery from the operation was uneventful. The patient was seen two months after the operation, at which time it was noted that there was still some difficulty in his speech, but the marked paralysis of the muscles innervated by the hypoglossal, noted immediately after the operation, had disappeared. When the face was in repose the folds of the skin of the forehead on the right side were marked, while on the left they could be made evident only when the patient frowned. The left eyebrow was slightly higher than the right, while the palpebral opening was somewhat larger on the left. The end of the nose appeared slightly deviated towards the healthy side. When the patient was asked to show his teeth, the naso-labial fold became evident, although less so than on the right. The corner of the mouth was more marked on the left than on the right, although the mouth could be made to close very satisfactorily. Electrical examination showed that the reaction was decidedly less on the left than on the right side, excepting for the orbicular muscles of the mouth. We thus had at the end of two months after operation a facial paresis instead of a paralysis, more particularly evident in the muscles supplied by the upper branches of the facial nerve. The reaction of degeneration was less marked than before the operation. The patient was again seen seven months later, for the last time, when the condition of affairs was found to be practically the same as at the former examination, although speech was nearly perfect.

The principal question to be decided is—When should surgical interference be undertaken in cases of facial paralysis? Experiments on animals show that regeneration always takes place if an anastomosis is done immediately after section of the nerve. This also applies to patients who have been operated on very shortly after the commencement of the paralysis, because the result in them has been far better than in those operated on after the affection has been present for some time. We know, however, that certain cases of facial paralysis, which are considered as incurable, may, after a number of months, or a year or more, completely disappear, and this fact is the embarrassing point in the question, because, in a given case, one may always question whether or not the paralysis may disappear of itself without any interference. From this reason alone, and all writers appear to be in accord on this point, it may be admitted that operation should only be undertaken some months after the appearance of the affection. Such is the opinion of Taylor, Alexander, Munsch, and others, but when one has the certitude that the causative factor of the paralysis has resulted in the complete destruction of the facial nerve, operation should not be delayed. In paralysis of peripheral origin, no matter what may be its cause, operation is justifiable when paralysis has become definitely established, and if electrical treatment gives no results. Surgical interference may also be resorted to in instances of facial paralysis *a frigore* when no improvement by long-continued electrical treatment can be obtained.

I am not prepared to give any opinion as to surgical treatment when facial paralysis has a central origin. The various nuclei of the motor nerves which arise in the bulb are very near together, and one is ignorant whether or not the lesion, which may be limited to the nucleus of one of these nerves, will not increase as time goes on, and whether the neighbouring bulbar nuclei are not already or will not later on become involved. In this case the patient will be submitted to a useless operation, and, consequently, when doubt exists, I believe it preferable to abstain.

A more serious objection to operative interference is the occurrence of a supplementary paralysis in the territory of the spinal accessory or hypoglossal nerve, because, if the operation is unsuccessful, this result would certainly add to the inconvenience already present; but from what I have been able to ascertain it would seem that end-to-end anastomosis is not an essential in the technique, and that lateral implantation will give quite as good results without giving rise to the possible inconveniences above mentioned.

It is certain that the associated movements occurring in the face and in the territory of the nerve chosen to fulfil the functions of the facial are not particularly æsthetic, but, by education, some patients may accomplish a dissociation of these movements. In sudden movements caused by raising the shoulder, a simultaneous contraction of the face occurs at the same time, while in slow, slight movements this may be avoided. By holding the arm on the side operated on this subterfuge permits them to move the muscles of their face without any movement in the shoulder. As to the question of education and how the bulbar and cortical centres will work, it may be said that it is unknown.

The question now comes as to the method of suture which should be employed—whether an end-to-end anastomosis with the central end of the spinal accessory or hypoglossal to the peripheral end of the facial should be done, or lateral implantation of the facial into the trunk of one of these nerves after longitudinal incision of its sheath?

It is quite certain that, when one considers the generally admitted theories regarding the neuron and regeneration, end-to-end anastomosis of these nerves should be selected, because the peripheral end of the facial when separated from its trunk being, according to admitted theories, definitely dead and no longer able to serve as a conductor to the axis-cylinders, which have sprung from the central end to which it has been anastomosed, one would suppose that in these cases the chance of regeneration is far more active, and perhaps even more logical. However, although admitting this theory, one can always explain regeneration by lateral implantation by supposing that the incision of the sheath made in the healthy nerve, in order to bury the end of the facial, will have injured an unknown quantity of axis-cylinders of that nerve; that these axis-cylinders, by their offshooting prolongations, later on penetrate into the sheath of the facial, and serve for the revival of this nerve. However, according to the experiments of Stewart and Ballance, the generally admitted theory of nerve regeneration would seem to be false. The axis-cylinder is not a cell emanation of the cells of the neural axis, or of the spinal ganglion, but is composed of a number of trunks closely united, each of which is elaborated by special cells annexed to the sheath of Schwann, and in the interior of which Ballance and Stewart found various elements some time after section of the nerves. Some of these elements, later on, gave rise to myelin, others to a portion of the axis-cylinder. When the peripheral end of the nerve is not united to the segment remaining in connection with the trophic centre, these phenomena soon cease, and maturity of the elements does not occur. When reunion occurs the fragments of the axis-cylinder enter into fusion with one another, penetrate and traverse the suture, in order to establish a connection with the central end. Under these circumstances, lateral implantation appears to be perfectly logical, and it is easily understood that it is not necessary to completely sacrifice the nerve, since simple contact is sufficient to re-establish the functions and nutrition of the peripheral segment of the cut nerve, after a more or less lengthy lapse of time.

But, independently of these reasons, it has been shown clinically that the results have been about equally good in lateral implantation and in end-to-end anastomosis, and, for this reason, I think that the former technique is perhaps preferable. Frasier prefers the end-to-end anastomosis for the following reasons:—The operation is easier; education of the cortical centre is surer if it has to act only on a new group of muscles; end-to-end anastomosis produces a more active regeneration of the nerve; and, lastly, paralysis of the muscles of the tongue and other muscles innervated by the hypoglossal is, relatively speaking, of little importance.

In reply to these arguments, it occurs to me to say that the ease with which the operation may be accomplished is not of any great importance in a given case. The question of education would be a more serious matter, but as yet it is little known, and I think that Frasier is too affirmative in this matter. As to his third reason, clinical results would seem to show that it has no foundation. I also believe that paralysis of the tongue and other muscles innervated by the hypoglossal is of sufficient importance to be taken into consideration, and the same applies to the sterno-mastoid and trapezius muscles. I agree with Taylor and Clark that it is not necessary to resort to end-to-end anastomosis, and still more so for the reason that, if this operation is not successful, the patient will have a supplementary paralysis added to the one already present.

The next question to consider is the choice of the nerve for anastomosis, the spinal accessory or the hypoglossal. The question of education of the centres here comes up, and, independently of the operative technique, a thing easily decided, because both operations are practically equally easy, one should consider the anatomical and physiological reasons which would influence one in the choice of one or other of these interferences.

A rapid consideration of the cortical and bulbar centres of the nerves under consideration may be properly introduced here. In the cortical motor zone one finds in the lower frontal and ascending parietal convolutions the centre of movement for the tongue and the face in contact with each other. The centres of movement for the shoulder are situated higher up at the lower part of the middle third of these same two convolutions. From this very reason preference should be given to the hypoglossal, because it may be supposed that, if it is selected, education will be easier. In the bulb one finds in the prolongation of the caput of the anterior horns a large nucleus from which arise from below upwards the spinal accessory, pneumogastric, and glosso-pharyngeal nerves; after a solution of continuity produced by the passage of the arciform fibres in this same prolongation is found the centre of the facial. On the prolongation of the base of the anterior horns of the cord is to be found a nucleus occupying the same level as the nucleus which is common to the above three mentioned nerves, and which gives rise to the hypoglossal. It will thus be seen that in the bulb the muscles of the facial and the spinal accessory are both in the prolongation of the caput of the anterior horn, but they are both separated by all that portion of the nucleus which gives rise to the pneumogastric and glosso-pharyngeal nerves. On the other hand, the facial and hypoglossal are not in the same column of grey matter, but in height nothing separates the nuclei of these nerves, and there are no other nerves arising between them. And still more, both nuclei are connected by the longitudinal posterior band.

The accessory nucleus of the hypoglossal, situated in front of and at the same level as the main nucleus, is nearer the nucleus of the facial nerve. Consequently, I am led to assume that, considering the anatomy of the cortical motor centres of the face, tongue, and shoulders, and given the arrangement in the bulb of the nuclei of the facial, hypoglossal, and spinal accessory nerves, it is more logical to make an anastomosis between the facial and the hypoglossal than with the spinal accessory. Now, even if education is only partial, I believe it would be less ungraceful for the patient and easier for him to move his face with the hypoglossal, although this may give unseen movements to the tongue when the mouth is closed, instead of being obliged to at the same time contract the muscles of his shoulder.

It has been seen that the search for the hypoglossal is hardly more difficult than that of the spinal accessory, and still more, the trunk of the hypoglossal is usually much larger than that of the spinal accessory—at anyrate, more so than the branch going to the trapezius; and it is for all these reasons that the hypoglossal is to be preferred.

CURRENT TOPICS.

THE GLASGOW MEDICAL SCHOOL.

In view of the near approach of the winter session, which opens on the 12th inst., the following particulars will be found of use to intending students:—

University of Glasgow.

The University grants four degrees in medicine. Of these, the M.B. and Ch.B. must be taken together.

Before commencing his medical studies, the student must pass the preliminary examination. This comprises (1) English, (2) Latin, (3) Elementary Mathematics, (4) Greek, French, or German. In the case of a candidate whose native language is not English, certain modifications may be made in the preliminary examination.

The certificate of having passed the above examination must, along with satisfactory evidence of the applicant having attained the age of sixteen years, be transmitted to James Robertson, Esq., 54 George Square, Edinburgh, so that the intending student may be registered in the books of the General Medical Council. Certain other examinations, or a degree in Arts or in Science from a recognised University, are accepted as exempting from the preliminary examination.

The degrees of M.B. and Ch.B. will not be conferred unless the candidate has been registered in the books of the General Medical Council for at least five years previously. Two of the five years of medical study must be spent at the University. There are four professional examinations. Of these, the first comprises Botany, Zoology, Chemistry, and Physics. Candidates are admitted to all or any two of these subjects at any examination held after they have attended a full course in each of the subjects professed. Those who have passed the first professional examination may be admitted to the second (Anatomy, Physiology, and Materia Medica and Therapeutics) at the end of the third winter session. The third examination (Pathology, Medical Jurisprudence, and Public Health) may be taken at the end of the fourth winter session. The final examination is open to those who have passed the third examination and completed their fifth year of study. The examination comprises Medicine, Surgery, and Obstetrics and Gynæcology. Every candidate for the final examination must submit a declaration, in his own handwriting, that he has completed his twenty-first year, or that he will have completed it on or before the day of graduation, and that he will not be, on the day of graduation, under articles of apprenticeship to any surgeon or other master.

Beginning in 1909, the final examination will, like the other three examinations, be held in March and October. Class fees vary; for the majority, the fee is £4s, 4s.

Clinical courses are usually taken in the Western Infirmary. A list of the different clinics will be found below.

Classes for Women are held in Queen Margaret College and in the Royal Infirmary.

The higher degree of M.D. may be taken by anyone who holds the Bachelor's degree in medicine and surgery, on his complying with certain conditions. These are: That he must be of the age of twenty-four years or upwards; that he produces a certificate of having been engaged subsequent to having received the degrees of M.B. and Ch.B. for at least one year in attendance in the medical wards of an hospital or in scientific work bearing directly on his profession, such as is conducted in the Research Laboratories of the University, or in the military or naval medical services, or for at least two years in practice other than practice restricted to surgery. The candidate must pass an examination in clinical medicine, and must submit a thesis, for the approval of the Faculty of

Medicine, on any branch of knowledge comprised in the second, third, or fourth professional examination for M.B. and Ch.B., excepting subjects which are exclusively surgical. Similarly, the degree of Ch.M. may be obtained by examination in clinical surgery and the presentation of a thesis on a subject not exclusively medical.

Full particulars of courses, fees, dates of examination, &c., will be found in the *University Calendar* (Messrs. MacLehose & Sons), or may be obtained from W. I. Addison, Esq., Assistant Clerk of Senate, the University.

FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.

(1) *Triple Qualification* (L.R.C.P.E., L.R.C.S.E., & L.F.P.S.G.).—In connection with the Royal Colleges of Physicians and of Surgeons of Edinburgh, the Faculty of Physicians and Surgeons of Glasgow grants a license to practice. This triple qualification admits to the *Medical Register*, and those possessing it are eligible for the public services. The course of study and the examinations are similar to those for the University degrees, but the class fees are lower. Qualifying courses are held in Anderson's College Medical School and in St. Mungo's College,[1] and particulars may be obtained from the respective Deans. Regulations for the triple qualification may be had from Alex. Duncan, Esq., LL.D., Secretary to the Faculty of Physicians and Surgeons, 242 St. Vincent Street, Glasgow.

(2) *Fellowship.*—This fellowship is open to registered practitioners of not less than 24 years of age, and of not less than two years' standing. The candidate must pass an examination in medicine or surgery, and in any one of the following subjects which he may select:—Anatomy, Physiology, Pathology, Midwifery, Diseases of Women, Medical Jurisprudence, Ophthalmic Surgery, Aural, Lanyngeal and Nasal Surgery; Dental Surgery, State Medicine, Psychological Medicine, Dermatology.

Fee, £50; to one who is already a licentiate of the Faculty, £25. If the candidate does not desire to be eligible to hold office, the fees are £30 and £15 respectively.

EXTRA-MURAL SCHOOLS.

Anderson's College Medical School.—This school is situated in Dumbarton Road, adjoining the main entrance gate to the

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[1] Many of these courses are recognised by the University as qualifying for graduation. For special regulations, see the respective *Calendars*.

Western Infirmary. The classes qualify for the M.B. and the Triple Qualification.

St. Mungo's College.—The school is in the grounds of the Royal Infirmary, Castle Street, and the students, as a rule, attend the clinics in the Infirmary. The classes are recognised by the University. They qualify also for the Triple Qualification.

Western Medical School (University Avenue).—Courses in Surgery, Midwifery, and Ophthalmology are conducted, which qualify for the M.B. and the Triple Qualification. Tutorial classes in other subjects of the curriculum are also held in the school. The students receive their clinical instruction in the Western Infirmary.

CLINICS.

Royal Infirmary (St. Mungo's College adjoins), 620 beds.—Visit hour, 9 A.M. daily; Outdoor Department, 2 P.M. Fees, including hospital practice, clinical lectures, and dispensary:—First year, £10, 10s.; second year and perpetual, £10, 10s.; for six months, £6, 6s.; for three months, £4, 4s. Students who have paid fees amounting to not less than £21 to any other hospital in the United Kingdom are admitted on payment of £3, 3s. for six months, or £1, 11s. 6d. for three months. Vaccination, £1, 1s.; pathology, £4, 4s.; or for University graduation, £6, 6s.; bacteriology, £2, 2s; practical pharmacy, £1, 11s. 6d. Fees for the above, as well as for all medical classes connected with St. Mungo's College, are payable to the Superintendent of the Infirmary, Dr. J. Maxtone Thom.

Western Infirmary (adjoining the University), 416 beds.—Visit hour, 9 A.M. daily; Outdoor Department, 2 P.M. Every student shall pay a fee of £10, 10s. for hospital attendance, and, in addition, £3, 3s. for each winter session, and £2, 2s. for each summer session of clinical instruction. Students who have completed their clinical course elsewhere shall be permitted to enter for a six months' course of the *hospital only* on payment of a fee of £2, 2s. The fees should be paid to the Superintendent, Dr. D. J. Mackintosh, M.V.O.

Victoria Infirmary (Langside), 180 beds.—For particulars, apply to the Superintendent, Dr. D. Otto Macgregor.

Royal Hospital for Sick Children (Garnethill), 74 beds.—Outdoor Department, 11·30 A.M. Fee, £1, 1s. for twelve months (Indoor and Outdoor). For information, apply to Resident Medical Officer.

Eye Infirmary (174 Berkeley Street, and 80 Charlotte

Street).—Hour of visit, 1 P.M. daily. Fee for six months, £1, 1s.; for twelve months, £2, 2s.

Ophthalmic Institution (126 West Regent Street).—Hour of visit, 2 P.M. Fee for a qualifying course, £1, 1s.

Insanity.—During the summer session, a course of lectures is given in the University, and clinical instruction in the Royal Asylum, Gartnavel. Fee for combined course, £2, 2s.

Dr Oswald conducts, in addition to the above, a clinic on Incipient Mental Disorders in the Out-patient Department of the Western Infirmary.

At Gartloch Asylum, Gartcosh, senior medical students may obtain appointments as resident clinical clerks. The appointments are for six months, and those holding them can attend classes in Glasgow in the earlier part of the day. Applications should be sent to the Medical Superintendent, Dr. W. A. Parker.

Clinical lectures are given at Woodilee Asylum by Dr. Hamilton Marr in connection with his systematic course at St. Mungo's College. Six resident clinical clerks are appointed annually, these clerkships being open to students of St. Mungo's College.

Fevers.—Clinical instruction is given in Belvidere and in Ruchill Hospital. Fee, for a course extending over ten weeks (once a week), £1, 1s.

Maternity Hospital.—Clinical instruction in Midwifery is given at the hospital, and there are exceptional facilities for practical work in the Outdoor Department.

There are also hospitals for diseases of the skin and of the ear, in which clinical instruction is given.

ROYAL INFIRMARY APPOINTMENT.—Dr. Robert Bruce has been appointed an Anæsthetist to the institution.

ROYAL HOSPITAL FOR SICK CHILDREN: NEW SITE.—For a very long time back the inadequacy of the indoor accommodation (74 beds) of the Royal Hospital for Sick Children to meet the demands made upon it has been fully recognised by the directors, the medical staff, and the public. There being no scope for enlarging the present building in Garnethill, the directors have been considering the subject of a suitable site, the expense of acquiring such, and building a new hospital thereon. By special appeals they have from time to time brought their needs before the community, and, of the £100,000 required, about £70,000 have been subscribed or promised.

The choice of a site has been difficult, as there was a conflict of opinion regarding the advisability of placing the new building in the town or the country, but within the last few days the directors have practically completed the purchase of a portion of the grounds of Yorkhill. This portion amounts to about 10 acres, and includes the best situated part of the estate. The ground stands high and slopes to the south, and although it is exposed somewhat to the smoke of the neighbourhood, the convenience of the situation will be patent to all. It is within easy reach of patients and medical staff, and its proximity to the University will be much appreciated by future generations of medical students.

It is proposed, to begin with, to erect a hospital containing 200 beds, and the extent of the ground permits of future enlargement.

ST. ANDREW'S AMBULANCE ASSOCIATION.—Some time ago we regretted having to notice the friction which had arisen between the St. Andrew's Ambulance Association and the Ambulance Branch of the Order of the Hospital of St. John of Jerusalem in England. We are glad to be able to state that such friction is now at an end, as, by an agreement entered into in February of this year, the Grand Priory of the Order has disbanded and terminated all its ambulance centres in Scotland, and refers the business of such centres to the St. Andrew's Association, and the Association has reciprocated with regard to its centres in England.

Under this agreement the Dundee Committee of the Order becomes a Committee of the Association, while the Committee in Edinburgh merges in that of the Association in that city; and in England, the Bradford Local Committee of the Association has been disbanded. The respective spheres of activity of the two bodies having been thus delimited, overlapping and waste of effort will now cease.

It may be remembered that, on the Marquis of Breadalbane resigning the presidentship of the St. Andrew's Association, the office was accepted by the late Lord Blythswood, and to the latter having brought the matter before the notice of H.R.H. the Prince of Wales, Grand Prior of the Order, is due the present happy state of affairs.

"EARLY HUMAN OVA."[1]—Students of embryology are well aware of the darkness which still enfolds the early stages of the development of the human embryo, and the memoirs just published by Drs. Bryce, Teacher, and Munro Kerr will command their interest.

The first of these memoirs deals with an ovum, aged 13 to 14 days, obtained from an abortion sixteen and a half days after coitus. The specimen which forms the subject of the second memoir was removed by operation by Dr. Munro Kerr, and represents an ovarian pregnancy, whose age may be estimated at from 14 to 22 days, but in which, owing to cessation or retardation of development, the appearances point to the age as being 12 to 15 days.

As regards the uterine ovum, the history of the specimen is followed by a detailed description of the blastocyst, its contents, and its plasmodium, and of the implantation cavity and its walls. From their findings on the above points, and a comparison with what is known in the cases of the guinea-pig, the mouse, and the hedgehog, the authors put forward a description of the imbedding of the human ovum. Briefly, the process is as follows:—The ovum, now an early blastocyst, comes to rest in a depression in the endometrium, destroys the surface epithelium, and passes into the decidua. Here, by a process of digestion of the endometrium, an "implantation cavity" is formed. The point of entry is closed by blood-clot, and the implantation cavity contains blood shed from the maternal capillaries which have been opened up. The destruction of endometrium is carried out by the plasmodium, which is developed from the trophoblast. The plasmodium is ultimately replaced by villi, consisting of cyto-trophoblast and plasmodi-trophoblast.

Further light is thrown on the origin of the plasmodium by a consideration of the specimen of ovarian pregnancy. This shows that uterine epithelium has nothing to do with the formation of the plasmodium; and the authors further claim that a consideration of the processes involved in the implantation of the blastocyst in both of their specimens establishes "beyond all doubt that the plasmodium is in the human subject a product of the fœtal ectoderm."

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[1] *Contributions to the Study of the Early Development and Imbedding of the Human Ovum.* I. An Early Ovum Imbedded in the Decidua, by Thomas H. Bryce, M.A., M.D., and John H. Teacher, M.A., M.D.; II. An Early Ovarian Pregnancy, by Thomas H. Bryce, John H. Teacher, and John M. Munro Kerr, M.B. With 10 Plates and 12 Figures in the Text. Glasgow: James MacLehose & Sons. 1908.

The naked-eye and microscopical appearances of the specimens are shown in numerous figures, and in both memoirs there is full reference to recorded cases.

It is impossible to over-estimate the importance of the facts ascertained by Drs. Bryce and Teacher. They have carefully and deliberately sifted the evidence before them, and the conclusions which they arrive at are irresistibly borne in on the reader as he peruses the text.

MEETINGS OF SOCIETIES.

OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

SESSION 1907-1908.

MEETING III.—18TH DECEMBER, 1907.

The President, DR. E. H. L. OLIPHANT, *in the Chair.*

I.—CASE OF CHRONIC INVERSION OF THE UTERUS DUE TO CARCINOMA.

BY DR. J. NIGEL STARK.

In May, 1905, I exhibited to the members of the Society a specimen of inversion of the uterus resulting from carcinoma, and read a paper on the subject. It was shown how rare was this condition—that it was, in fact, practically unknown. No authentic case had been recorded, to my knowledge, until that time. Inversion of a chronic type, not due to parturition, is nearly always produced by a submucous fibroid tumour attached to the fundus of the uterus. Occasionally a sarcoma tumour is the cause, and a very few instances of this nature have been reported.

I have had the remarkable experience of seeing and operating upon a second case. The patient was 56 years of age, and was seen by Dr. Kirkwood, Barrhill, and Dr. M'Kerrow, Ayr. She was sent to me, and entered a nursing home. There had been severe hæmorrhages from time to time for a few months, and a foul-smelling discharge. Examination by the vagina disclosed the presence of a ragged, pulpy mass, which proved to be the body of the uterus inverted. The fundus presented at the lowest part, and upon it there was implanted a mass of sloughing, friable tissue. Reduction was impossible, and on 30th October, 1907, I performed total hysterectomy, and removed both ovaries and tubes. The microscopical examination later on revealed the fact that the tumour, which had grown from the fundus and had led to the inversion, was a pure example of an endothelioma.

The recovery of the patient was perfect, and she is now in good health.

The original paper, in which I entered into a discussion of this subject in detail, was published in the *Glasgow Medical Journal* for January, 1906.

II.—NOTES OF A CASE OF GANGRENE OF THE LEG FROM TUBERCULOSIS DURING PREGNANCY.

III.—NOTES OF A CASE OF HEBOTOMY OR PUBIOTOMY.

IV.—CASE OF SYMPHYSIOTOMY DONE FOR THIRD TIME ON SAME PATIENT.

By Dr. Robert Jardine.

Dr. Jardine's three communications were published in the *Journal of Obstetrics and Gynæcology of the British Empire* for March, 1908.

REVIEWS.

Thomas Linacre. By William Osler, M.D., F.R.S. Cambridge: At the University Press. 1908.

In the contents of this comely little volume, with its two portrait-illustrations and nine title-page plates of the works of Galen, &c., we have the first Linacre Lecture, 1908, St. John's College, Cambridge, since its change into an annual lectureship. As was to be expected from the pen of the distinguished Oxford Professor of Medicine and cultured *savant* on the genius and writings of such great men as Sir Thomas Browne, author of *Religio Medici*, we are presented in these dainty pages with a most interesting and learned memoir of Thomas Linacre, the great medical humanist, grammarian, and court physician in the latter half of the fifteenth, and the first quarter of the sixteenth, century. In tracing his life-history—from his birth at Canterbury, education at Oxford, travel studies at Florence, Rome, Venice, and Padua, return to Oxford, where he taught Greek and probably practised medicine, down to his becoming physician to Henry VIII—the lecturer lays before us a career of singular simplicity, great activity, and the profoundest learning, with quaint glimpses into the life of Italian university cities and their professors, together with their various attitudes towards the old and the new learning at that distant period.

His history of the Linacre Foundations—"memorable as the first attempts to endow university teaching"—which comprised two lectureships at Oxford and one at Cambridge, and his accounts, moreover, of the different talents and qualifications of the many celebrated and non-celebrated persons who held the lectureships from then till now, are full of much curious and useful information relative to past and present Oxford and Cambridge medical teaching, which cannot but greatly interest the thoughtful reader of these pages, recording, as they do, a life, whose example "of devotion to learning, to medicine, and to the interests of humanity," is a much more valuable bequest to the world than even the Foundations. It is worth noting in this connection the fine compliment the lecturer pays to the Principal of Glasgow University, Dr. Donald MacAlister, the last occupant of the Cambridge lectureship before it was changed into an annual one. "In the distinguished man with whom has closed the long list of Linacre lecturers, were focussed many of the most striking characteristics of his predecessors, lay and medical. I doubt if among the fifty there was one whose work he could not have undertaken with a light heart. We in the profession know him as a skilful and learned physician. You are smarting under the loss of a gifted colleague, but the public fully realised that such high mental voltage demanded a wider scope, and this has been found in the responsible position entrusted to him by the Crown." Of few men in the profession since the days of the courtly Scarborough can it be truly said

"'Inter medicos Hippocrates,
Inter mathematicos Euclides.'"

The perusal of this little work strongly suggests to us that the Finlayson Memorial Committee should secure the learned

Oxford Professor for its next lecturer on some kindred historical medical theme, like the subject under review, the whole spirit of which is in such perfect harmony with Maister Peter Lowe's biographer, whose gifts and labours the lectureship was founded to commemorate.

Quain's Elements of Anatomy. Edited by E. A. SCHÄFER, J. SYMINGTON, and T. H. BRYCE. In Four Volumes. Vol. I: Embryology. By T. H. BRYCE. Eleventh Edition. London: Longmans, Green & Co. 1908.

IT is not possible to "boil down"—if we may be allowed to use the expression—the subject of anatomy to the limits of a pocket manual. Such a volume falls to be classed among the "abiblia," and, although we are in full sympathy with impressing on students the facts of applied anatomy, we believe that such a knowledge should rest on a solid foundation of dissection, and of reading such as is supplied in one of the larger books.

That our belief is shared by others is shown by the circumstance that in a field of many younger competitors *Quain's Elements* has held its own, passing through many successive editions. The present edition of the work differs from its predecessors in appearance as well as in contents. It will be published in four volumes, of which the first, dealing with embryology, is before us. This volume has been entrusted to Dr. Bryce, who has rewritten it, and has added a large number of illustrations. The subject is considered in two sections, dealing respectively with general embryology and the development of the organs.

In the section on general embryology the author begins with a description of the animal cell and its component parts, and then goes on to the history of the sex cells. The segmentation of the ovum, the formation of the germinal layers, early changes in the blastoderm, development of muscles, connective tissues and blood-vessels, and development of fœtal membranes and placenta, are considered in their order, and the section concludes with the general history of development.

Throughout this section we are struck by the advance which has been made towards definite information regarding early changes in the human embryo. Wide gaps remain, and their existence makes the subject a far from easy one; but

Dr. Bryce has been successful in making many difficulties clear for the reader, although he displays great caution in founding statements regarding man on the facts of comparative embryology. This is well instanced in the paragraphs on the formation of the germinal layers, while a good example of the author's clearness of style will be found in his description of the process of karyokinesis.

In the second section of the volume, the development of the organs is described with admirable lucidity, and here, as in the former, the text is much helped by the numerous illustrations, many of which are from Dr. Bryce's own pencil.

Although the bibliographical lists of the former edition have been omitted, there are many references in the footnotes, and the reader is referred further to Hertwig's *Handbuch.*

This volume is intended to form "a complete text-book of Human Embryology." We congratulate the author on having as nearly as possible attained his aim. Should the subsequent volumes of this edition come up to the present, there will be no risk of *Quain's Elements* failing to maintain the position it has so long held.

Food and Hygiene. By WILLIAM TIBBLES, LL.D., L.R.C.P., &c. London: Rebman, Limited. 1907.

THERE is plenty of room for a well-designed work on food in relation to hygiene, and Dr. Tibbles has supplied a gap in this respect with considerable credit. The subject of food in relation to general hygiene is a thorny one, and the author has tackled it in a vigorous and, on the whole, a satisfactory manner. Doubtless most medical practitioners will still keep to their own pet hobbies or fads with regard to dieting in the course of various specified diseases, but Dr. Tibbles is broad-minded enough to indicate in all cases alternative lines of treatment in the way of diets to suit altered and altering conditions.

The calculation of diets and diet types in Chapter VIII are most valuable, and the diet tables there given—showing diets observed in various hospitals, prisons, in the mercantile marine, &c.—are particularly instructive, especially with regard to the variations which should occur under climatic, seasonal, and other influences.

The chapters on the origin and composition of the various food-stuffs are remarkably complete, and form a complete compendium of information with regard to these important items. The different characters of the various starchy foods are explained carefully, and their relative values as energy producers succinctly stated. Potable and medicinal waters receive full notice.

Under "Air and Climate" the various health resorts at home and abroad are fully dealt with, the information being in all cases accurate, and combined with suggestions as to the cases best suited for each.

The latter portion of the book, dealing with selected diseases and their treatment, while useful, is perhaps rather beyond the true scope of the work as indicated by its title; but the value of this part to the general practitioner will be at once evident.

The appendix contains several useful tables, especially those giving the composition of all the ordinary food-stuffs and their simpler combinations, as in puddings. For the purpose of obtaining a purin-free diet, a list of purin-free food-stuffs is given on the last page.

Hay-Fever, Hay-Asthma: Its Causes, Diagnosis, and Treatment. By William Lloyd, F.R.C.S. Second Edition. London: Henry J. Glaisher. 1908.

The first edition of this work received a favourable notice in a very recent issue of this *Journal*, and as but few alterations have been required in the new edition, it is unnecessary to discuss it at length. The subject is a curious and interesting one, and the author is to be congratulated on the hearty reception his work has received.

Diphtheria in Practice. By W. F. Litchfield, M.B.Syd. London: Baillière, Tindall & Cox. 1908.

This little book does not pretend to be an exhaustive treatise on diphtheria, but gives a fairly complete and eminently practical account of the disease. The author strongly emphasises the great importance of early diagnosis and early injection of antitoxin. The dosage of antitoxin employed by him is detailed, and the operations of tracheotomy and intubation are fully described. A few statements, such as that post-diphtheritic paralysis is not due to peripheral neuritis, may be taken exception to. The illustrations of bacteriological apparatus have no place in a work of this kind, and that of nasal feeding on page 77 is so indistinct as to be useless. The practitioner will find in this book much that will be helpful to him.

Protozoa and Disease, comprising Sections on the Causation of Small-pox, Syphilis, and Cancer. By J. JACKSON CLARKE, M.B.Lond., F.R.C.S. Part II. London: Baillière, Tindall & Cox. 1908.

ABOUT four years have elapsed since the first part of this work was published, and one wonders why the author has kept his readers waiting so long for the second instalment. For the volume, although dealing with matters of very great importance, is by no means a large one, and the subject is so interesting that one could easily imagine the author working very much overtime in order to make progress. Great advances have been made in recent years in our knowledge of tropical diseases, and good work has been done in certain places in stamping out malaria and yellow fever; but still more fascinating, perhaps, is the study of the parasites of such diseases as sleeping sickness and syphilis.

Some of the earlier chapters in the present volume treat of non-parasitic protozoa, some parasitic protozoa, some tropical diseases, ticks, piroplasmosis, small-pox and vaccinia, and syphilis and yaws. In the latter part of the work special attention is given to the subject of sarcoma and cancer. Mr. Clarke tells us that it is now over thirteen years since he concluded that a cancer of the nasal fossa was caused by protozoa. "By further study I extended the view to other cancers and sarcomas, and to syphilis, &c. Every time during these past years that I have re-examined my specimens—even when I have tried to take the opposite view—I have been confirmed in my view, which is to the effect that the common forms of cancer and sarcoma are caused by more or less local infections by protozoa" (p. 118).

Whether or not the reader is prepared to accept all Mr. Clarke's conclusions without further argument, he will find much that ought to interest him in this little volume. Numerous illustrations add to the value of the work.

Nothnagel's Encyclopædia of Practical Medicine. English Edition. Diseases of the Heart. By PROFESSOR TH. v. JÜRGENSEN, PROFESSOR L. v. SCHRÖTTER, and PROFESSOR L. KREHL. Edited, with additions, by GEORGE DOCK, M.D. London: W. B. Saunders Company. 1908.

DISEASES of the heart are so extremely common that every physician of any standing has a wide experience of them, and may claim the right to criticise the teaching of others. It may be admitted, however, that no names could have been selected as more representative of internal medicine in the Germany of to-day than the three which adorn the title-page of this volume. Professor v. Jürgensen, of Tübingen, writes on cardiac insufficiency, on endocarditis, and on valvular disease. Professor Krehl, of Greifswald, contributes the section on diseases of the myocardium and nervous diseases of the heart. The section on diseases of the pericardium comes from the pen of Professor v. Schrötter, of Vienna, whose death took place quite recently under tragic circumstances. Professor Dock's editorial work is, of course, essential, since the treatise would otherwise not be up to date; thus the discussion on the relationship of the Stokes-Adams syndrome to the physiological phenomenon known as heart-block is an interpolation by the American editor; and so, too, are additional details on the operation of tapping the pericardium.

Viewing the work as a whole, it must be recognised as one that demands the careful attention of the specialist in diseases of the heart, both because of its size and because of the position of the authors. Yet it is by no means the most satisfying volume of this fine and very valuable series, for which the profession owe so much to the editors and publishers.

A Text-Book of Treatment. Edited by R. J. FERGUSON, M.D., F.R.C.S. Eng. Part I: Obstetrics and Gynecology. By JOHN CAMPBELL, M.A., M.D., F.R.C.S. Eng. London: Sidney Appleton. 1908.

THOUGH called a text-book, this work is properly a dictionary of treatment, and doubtless the editor would have adopted this title had it not been for the well-known volume of the the same name written by the author's celebrated fellow-townsman, Professor Whitla. From the point of view of the busy medical practitioner, the alphabetical arrangement of subjects has many advantages, more especially when it is supplemented, as in this case, by many good illustrations and a copious index. The author is entitled to considerable praise for the able manner in which he has condensed the various items of information which he has given. He has omitted little of value, and the various modes of treatment which he advocates are, in the main, reliable and up to date. Might we suggest, however, that neither snare nor ligature is necessary in the treatment of a uterine polypus with a thick pedicle? If, while twisting the pedicle, the practitioner will only snip it from time to time with stout, short-bladed scissors, he will find that the resulting hæmorrhage is trifling and easily checked, after removal of the tumour, by lightly packing the uterine cavity with gauze.

The present volume is the first of a series of three. The remaining two, which are to appear shortly, will deal with Medicine and Surgery, the former by Dr. William Calwell, the latter by Mr. Robert Campbell, both of Belfast.

A Manual of Orthopedic Surgery. By AUGUSTUS THORNDYKE, M.D. London: Rebman, Limited. 1907.

THIS text-book, in the words of the author, is "an attempt to present Orthopedic Surgery in a simple way to the student and practitioner," and in it the deformities are grouped both etiologically and chronologically. This useful method of grouping constitutes the chief value of the book—which, however, is not lacking in a detailed description of the symptoms, signs, pathology and treatment of the various forms of orthopedic deformity.

The manual has five parts. Part I deals with ante-natal deformities, &c., and contains very good chapters on congenital clubfoot, congenital dislocation of the hip, and obstetrical paralysis. Part II deals with deformities due to the action of external forces on growth, and here we find excellent chapters on scoliosis, flatfoot, coxa vara, &c. In Part III "diseases and injuries of the bones and joints, excepting those of the fetus," are included, and there are several paragraphs in this which call for criticism. On p. 248 the operation of resection of the head of the femur is described in detail—the incision is 6 inches long, the tendons of the three glutei are to be divided, and the head of the bone turned out of its socket! On p. 257, after describing the operation of arthrectomy of the knee-joint, the author calmly states that in his hands this operation has nearly always been followed by secondary septic infection! He condemns the operation of the excision of the knee-joint, and states that its mortality percentage is 10. The "chapter" on sacro-iliac tuberculosis consists of exactly one and a half pages, and is strangely incomplete.

Deformities due to acquired diseases of the nervous and muscular systems are very well treated in Part IV, although we would have wished for a fuller description, say, of the varieties of "wry-neck." The electrical and operative treatment of infantile paralysis is most fully described.

By far the best of the book is kept to the last. Part V contains a technical description of the use of plaster of paris, of the way to make, to fit, and to use some very clever orthopedic appliances. This part of the book is of real value, both to practitioner and to surgeon. A full description is also given of various moulded leather splints and jackets. The book is well bound, and is very freely illustrated by diagrams, photographs, and skiagrams. It is full of those grotesque misspellings which abound in American text-books, and are evidence of very careless proof revision, *e.g.*, hypernia, oseotome, Handburch, assitant, pyrinnformis, &c.

The Treatment of Tubercular Spinal Curvature. The Treatment of Congenital Dislocation of the Hip. By Dr. F. CALOT. German Translations by Dr. P. EWALD. Stuttgart: Ferdinand Enke. 1906.

WRITTEN by an acknowledged authority, these two works do not allow criticism. They are important contributions, monographs in a sense, on the subject of orthopædic surgery. The diagnosis and anatomy are considered in so far as they concern the treatment. Very minute directions are given for preparation of the appliances used and the steps necessary in their application. In the book on congenital dislocation of the hip, the reposition methods are fully considered, and the "bloodless" method especially is advocated as a certain procedure in most cases. The illustrations deserve special mention for their excellence, and the printing is good.

A contents-table of the chapters is provided, which gives in reality a short and connected account of the whole work.

ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

MEDICINE.

Case of Acute Lymphopenic Lymphatic Leukæmia. By R. S. Lavenson (*University of Pennsylvania Med. Bull.*, July, 1908).—The patient was a man, aged 40. His illness started in November, 1906, with an ulcer in the hard palate. This gradually increased in size, and in a month's time there was also some ulceration in the gums of the lower jaw, as well as enlargement of the submaxillary glands. He was admitted to hospital on 1st January, 1907, and at that time his only complaint was of soreness of the mouth and some difficulty in swallowing. On examination of the mouth the ulceration of the hard palate was seen to extend from the incisor teeth to within an inch of the uvula. There was also considerable ulceration of the gums. In the centre of the ulcer was a greyish-white slough, and the edges were irregular in outline. The temperature was 102° F.; pulse, 84; and respirations, 24. No diagnosis was made, but the man was treated with anti-syphilitic remedies, though there was no history pointing to any specific disease. By 10th January there was tenderness and swelling in the axillary glands, and about a month later a tumour, about the size of a robin's egg, was noted in the frontal region just above the right eye. On 25th February some dark-red papules appeared on the back and neck, and in the course of the next week or two the whole trunk was covered with similar papules in various stages of evolution. About this time the glandular masses on either side of the neck had become so much enlarged that breathing was very difficult. During the whole illness there was a considerable amount of fever, the range being apparently from 100° F. to 105° F. The examination of the blood was as follows:—

	Red corpuscles.	Hæmoglobin.
Jan. 1, ...	3,400,000 per c.mm.	75 per cent.
Feb. 20, ...	5,210,000 ,,	72 ,,

	White corpuscles.	Polynuclears.	Lymphocytes.	Large mononuclears.
Jan. 1,	5,400 per c.mm.	75 per cent.	19 per cent.	4 per cent.
,, 10,	6,800 ,,	...	...	...
,, 25,	6,300 ,,	...	...	...
Feb. 2,	4,500 ,,	...	...	...
,, 20,	8,000 ,,	64 per cent.	16 per cent.	12 per cent.
Mar. 2,	4,700 ,,	...	...	...
,, 9,	5,200 ,,	96 per cent.	1·6 per cent.	1·4 per cent.

The patient died on 10th March.

At the *post-mortem* examination the spleen was found to be much enlarged, weighing 31½ oz. The retroperitoneal, mesenteric, mediastinal, and peribronchial glands were enlarged to the size of large beans. Within the mesentery, and not associated with the mesenteric glands, were a number of well-defined nodules. Similar nodules were found in both kidneys, in the ilium, and in the right lung. Microscopic examination of these lesions showed them to consist of a lymphocytic infiltration. In the skin lesions the infiltration was into subcutaneous tissue, and extending well into the corium. In some of the older nodules the epidermis was necrotic, in others it was lifted from the corium, forming bullæ. The spleen also showed hypertrophy of its follicles as well as lymphocytic deposit in the pulp. A similar appearance presented itself in the lymphatic glands, so that the sinuses were undistinguishable from the cortical portion. The nodules in the kidneys, lung, mesentery, and ilium also consisted of dense lymphocytic deposits, and the ulcerations in the mouth apparently had a similar origin. The condition of the bone marrow is not noted.

In discussing the case, the author points out that it cannot very well be classified under any one of Türk's three varieties of the lymphomatoses, viz., lymphemic lymphatic leukæmia, sublymphemic lymphatic leukæmia, and alymphemic lymphatic leukæmia, for not only is there neither an absolute or relative increase of lymphocytes, but they are both absolutely and relatively much below the normal. It is to express this condition that he has used the term "lymphopenic lymphatic leukæmia."—W. K. HUNTER.

Pneumonia and its Complications. By Hector Mackenzie, M.D., F.R.C.P., and others (*Proceedings of the Royal Society of Medicine*, 1907, vol. i, Nos. 1 and 2).—This address formed the introduction to a discussion on the subject at the inaugural meeting of this Society, and the conclusions were based on a study of 7,868 cases collected from London hospitals, of patients of 10 years old and upwards, during the ten years 1897-1906.

Attention was mainly directed to the complications; of these the most common was *pleurisy*, and the most important *empyema*. In a series of 2,440 cases he found pleurisy with serous effusion 54 times, and empyema 28 times, or about 1 in 45, and 1 in 90 cases respectively. Personally he could recall no case of pleurisy with effusion which required tapping, but this was not corroborated by other observers. In the series under discussion empyema occurred in 290 cases, or 3·7 per cent, and 88 cases were fatal. The incidence varied from 1·2 per cent in one hospital to 8·2 per cent in another. It was noted more frequently in left-sided pneumonia, though an explanation of this fact was not evident. He found pneumococci in 9 cases out of 10, the other organisms being streptococci, staphlycocci, and tubercle bacilli. Others found the pneumococci less frequently.

Pericarditis was the next most common complication. He observed it 54 times in 2,114 cases, in 43 of which it proved fatal, while in the present series it was noted 239 times, or in 2·9 per cent of the cases. Its recognition was more useful for prognosis than for treatment.

Endocarditis was not found to be a frequent complication, and Preble is quoted as having found it 126 times in 11,243 cases of pneumonia, or in about 1 per cent. Out of 1,575 cases Mackenzie found 16 cases, being about the same proportion, while in the present series 69 cases were noted. The prognosis is grave, Preble having only four recoveries.

Abscess and gangrene taken together account for 65 cases of the present series, with a fatality somewhat similar to that of endocarditis.

Arthritis was noted in 40 cases, and is reckoned a rare complication, the idea of its apparent frequency being explained by the fact that single cases are usually reported.

Nephritis, while more common, was still an uncommon accompaniment, but the lists were incomplete on this point.

Peritonitis was very rare, only 10 cases being noted.

Chronic pneumonia, *meningitis*, *otitis*, *neuritis*, and other conditions, were likewise very rare.

Of the 7,868 cases of the series, 1,722 terminated fatally, or 21·8 per cent.

As regards special treatment, the serum method was an acknowledged failure, though it might not long remain so, but longer trials with present knowledge appeared useless.

Active immunisation afforded more hope, and while the few favourable cases reported under vaccine treatment were not conclusive, they were encouraging, and were an inducement to further work on similar lines.

—GEO. A. ALLAN.

Case of Acute Poliomyelitis associated with a Diplococcal Infection of the Spinal Sac. By William Pasteur, M.D., Alexander G. R. Foulerton, F.R.C.S., and Henry MacCormac, M.B., Ch.B. (*Archives of the Middlesex Hospital*, vol. xii).—The patient was a boy, aged 13½ years. On 11th November, 1906, he was apparently in his usual health. On the evening of the following day he complained of shooting pains in the thighs and across the abdomen at about the level of the anterior superior iliac crests. He was seriously ill during the night and the following day with severe abdominal pain and quiet delirium. On the 14th he was unable to leave bed because of complete loss of power in both legs. On the 16th he was quite helpless, and unable to move himself in bed. He was unable to cough. On the 19th he was removed to hospital. For ten days after admission his temperature varied between 100° and 103° in consequence of broncho-pneumonia. The head was moved with difficulty because of muscular weakness, and he was unable to lift it from the pillow. There was no evidence of paralysis of the facial, lingual, pharyngeal, or external or internal muscles of the eye. Both lower limbs were in a condition of complete flaccid paralysis, and, except the right peroneal muscles, which responded to strong galvanism, the paralysed muscles did not react to either faradic or galvanic currents. The plantar, patellar, and cremasteric reflexes were absent. Respiration was entirely thoracic in character, there being complete paralysis of the diaphragm. The sphincters were not involved. There was collapse of the left lung. Muscular power in the arms was weak. The extensors reacted to strong faradism, while the flexors reacted normally.

On 30th November temperature fell to normal, and general improvement began. Early in December there was some recovery in the muscles of arm, shoulder, and neck, and by the end of the year he had free use of the arms, and could move in bed, but he was still completely crippled so far as the lower limbs were concerned. The course of the condition was in accordance with acute poliomyelitis of very wide distribution.

As regards personal history, the child was delicate looking, and he had had most of the illnesses of childhood, and had been in hospital for rickets and bronchitis. He had a fit at the age of two, and another at the age of eleven.

Bacteriological examination.—Specimens of cerebro-spinal fluid were taken (1) on 22nd November, 1906; (2) on 14th December, 1906; (3) on 25th March, 1907; and (4) on 17th April, 1907. It was clear when withdrawn, but threw down a greyish haze on standing, which microscopically was found to consist of lymphocytes. Examination of the fluid on the two last occasions was negative both on microscopical examination and after animal experiments. In (1) and (2) a few widely-scattered diplococci were found, sometimes two pairs being grouped as tetrads. They were free in the fluid, never intracellular. Media of every description were inoculated with the fluid, but in no instance was a growth of any kind obtained.

One rabbit inoculated intracranially with (1) died on the twenty-second day, and showed diplococci in the cerebro-spinal fluid. Two rabbits inoculated with this rabbit's cerebro-spinal substance and fluid gave negative results.

One rabbit inoculated with (2) died in twenty-four hours from the operation. Another also inoculated with (2) had marked paralysis of the hind limbs on fiftieth day, partial paralysis of the fore limbs on fifty-second day, and died on fifty-third day. Diplococci were found in the cerebro-spinal fluid.

Two rabbits were inoculated with cerebro-spinal substance and fluid from the last rabbit. One was killed on the forty-first day, with a negative result. The other developed complete paralysis of the hind limbs and partial paralysis of the fore limbs on the forty-ninth day. It was killed on the fiftieth day, and diplococci were found in the cerebro-spinal fluid. Two rabbits inoculated from this one gave negative results.

In short, the authors were able to recognise an extracellular diplococcus in two different specimens of cerebro-spinal fluid from the patient. Inoculation into the rabbit produced the same diplococcus in the two cases, and in one case produced paralysis. Subinoculation from this case showed diplococci, and also produced paralysis.

Taken in conjunction with investigations made by Geirsvold in Norway, they are of opinion that there is beyond question a specific infective disease, of which acute poliomyelitis is a frequent and prominent, but not essential, feature. They suggest, however, that there is not sufficient reason for assuming that acute poliomyelitis is always a result of this particular diplococcal infection. They think that the cell changes that result in symptoms of acute poliomyelitis may be caused by the toxins of other infective processes, and refer to two cases which followed measles, one after typhoid fever, and one after rheumatic fever.—Geo. A. Allan.

SURGERY.

A Contribution to the Study of Linitis Plastica. By MM. Th. Jonnesco and J. Grossman (*Revue de Chirurgie*, January, 1908).—The authors, having had an opportunity of studying a case of this rare condition in detail, give in this paper the result of their investigations.

A brief summary is first given of the literature on the subject, and it is shown how opinion oscillated as to whether the affection was of an inflammatory nature, or whether it was a type of cancer. For those who upheld the "inflammation" theory, it remained to prove (1) whether the condition was secondary to chronic gastritis; (2) whether it was a primary lesion of unknown character in the cellular tissue of the stomach; or (3) whether it was a cellulitis spreading up from the retroperitoneal tissue—all these views having been upheld by various observers.

Clinically, the illness showed usually two stages—(1) *The gastric*, in which the picture presented was that of chronic gastritis, sickness, pain in the epigastrium, vomiting of food and mucus, and occasionally hæmatemesis; (2) *The peritonitic*, showing ascites, diarrhœa, progressive cachexia, and death after two or three months.

Concerning their own patient. He was a man, 42 years of age, and had suffered with stomach symptoms for three years, with epigastric pain shooting through to the back, brought on by the ingestion of food and ceasing after an emesis had been procured. Latterly even fluids produced these clamant symptoms, with, in addition, attacks of dyspnœa, and could not be tolerated, so that the patient became exceedingly emaciated.

He was admitted to hospital with a diagnosis of œsophageal obstruction. This diagnosis was, however, revised on finding that a bougie passed in 52 cm. from the line of the teeth before meeting any obstruction, and the question of a bilocular stomach was discussed. This diagnosis seemed to be corroborated by the fact that the vomitus, coming about ten minutes after the ingestion of food, coloured Congo paper blue, and gave a positive reaction to Günsburg's test. Further tests demonstrated that the capacity of the stomach was very small. Operation was then determined on. On exploring the abdomen, after considerable trouble the stomach was found. It was firm and resistant to the touch, and in shape it resembled a "black pudding," while its diameter was that of the normal small intestine. Unfavourable as these condition were, it was determined to try and perform a gastrostomy, and after having fixed the stomach up to the parietes with great difficulty, the operator proceeded to incise its wall. The scalpel cut through more than 1½ cm. of dense tissue, almost as hard as wood, before the lumen of the stomach was reached, and, indeed, there was hardly any lumen, as it could barely admit the little finger of the operator. The patient's condition did not permit of any further intervention at that time, though little good could be expected from what had been done.

Five days later it was agreed to perform a jejunostomy, as it was found impossible to get any nourishment administered beyond the gastrostomy opening owing to a condition of stenosis about the pylorus. A jejunostomy [Y method] was accordingly performed, and the patient stood the operation well, and it was found easy to feed him regularly by this new opening. An attempt was made later to close the gastrostomy wound as the parts around were becoming digested by the action of the gastric juice. The patient died two days later.

At the autopsy the peritoneal cavity seemed to be absolutely normal—no ascites, no adhesions. The stomach was hard and rigid, and on removal from the body it retained its shape. The greater curvature was marked by several deep grooves running transversely to the long axis of the stomach. The length was 15 cm.: the breadth, 4 cm.; and the thickness, between 3 cm. and 5 cm. To the touch it felt hard, and on incision it creaked beneath the knife. The thickening began abruptly at the cardiac orifice, but tapered off into the duodenum. The pylorus was practically stenosed, and the capacity of the stomach was certainly not greater than 40 c.c.

The mucous membrane was smooth and uniform, without the least appearance of old or recent ulceration. There was no appearance of any perigastritis.

The microscopical examination was undertaken by M. le Dr. J. Bruckner, who reported as follows:—"The sections show no mucous membrane. It probably disappeared owing to maceration after the autopsy. With the low power one immediately recognises great changes from the normal. The serous covering is thickened. The external muscular coat is thinned. The internal muscular coat seems fairly normal. Most important and striking of all is the enormous thickening of the submucous tissue, which is almost twice as thick as the other parts of the stomach wall.

"With the high power one observes further changes. The subperitoneal tissue is thickened, connective tissue bands with round and fusiform cells are observed, while there is especially an abundance of elastic tissue fibres. These last are grouped in concentric circles, or abruptly terminate as if broken off, while others have the appearanee of vine tendrils. Fine prolongations of these fibres are continued in between the fibres of the external muscular coat, of which the muscle fibres are found to be much atrophied and separated up into bundles, the interspaces being occupied by a young cellular connective tissue. Between the various atrophied fibres themselves connective tissue is not nearly so abundant as these prolongations of elastic tissue, which constitute the feature of this part of the field. There is little change observed in the internal muscular coat.

"The layer of elastic tissue separating the muscular coat from the submucous tissue is much thickened by the addition of a great many fine fibres. It forms quite an elastic band, and from this band of elastic tissue there passes perpendicularly through the submucous tissue and towards the mucous membrane a series of thick, strong, elastic fibres. The submucous tissue shows the most important changes. Formed of dense, wavy, adult, connective tissue, enclosing spaces in which younger tissue is forming, it exhibits large numbers of elastic fibres."

The appearance of these fibres is minutely described, and several diagrams illustrate the points emphasised by the author.

In short, there is nothing in the appearance of the sections to indicate a diagnosis of cancer. The submucous tissue is solely formed of connective tissue, showing some signs of chronic irritation; it is comparable to the tissue formed in section of "fibroma molluscum." The atrophy of the muscle fibres before the advance of elastic fibres is noteworthy. The few micro-organisms discovered in the sections are thought to have only recently gained entrance through the operation wounds.

Thus, the author's opinion is a confirmation of the view of Rokitansky, viz., that the condition is a purely inflammatory one, having its greatest intensity in the submucous coat.—W. Rankin.

A Case of Linitis Plastica of the Stomach (Brinton) Cured by Jejunostomy. By Professor A. Freiherr von Eiselberg (*Surgery, Gynæcology, and Obstetrics*, August, 1908).—This contribution serves to show how obscure the etiology of "linitis plastica" is, how difficult it is of diagnosis, and how far we are at present from having a clear, defined opinion of those cases to which the term should be confined.

A widow, 41 years old, who at the age of 17 had suffered from peritonitis, began to suffer from "pressure in the stomach," occasionally followed by vomiting. Her normal weight was about 72 kilos. She underwent courses of dieting, massage, electricity, and exercises, but in two years she had lost nearly 20 kilos in weight. An examination at this time showed that the stomach could only contain a very little fluid at a time. The vomitus gave no abnormal reaction. "Pressure in the stomach," anorexia, and frequent vomiting were the clamant symptoms. A tumour could be detected in the epigastrium. At times there was sweating, and an evening temperature of 38·8° C. The urine and blood seemed normal. An examination of the pelvic organs showed swollen and inflamed adnexa. A diagnosis of hour-glass contraction of the stomach with perigastric adhesions was made, and a laparotomy was advised. At the operation the stomach was found completely bound down by a mass of adhesions. When these were separated and tied, the organ appeared as a long, narrow sac, with a width corresponding to that of the transverse colon. The surface of the stomach, where free from adhesions, appeared covered with a network of scars like "knitting work." No ulcers were seen or felt; the organ felt like a tube with stiff walls, and the changes were most marked towards the pyloric end of the stomach. No anastomosis could be effected, and as permission had not been obtained to perform a jejunostomy the abdominal wound was closed. The patient was little upset by the operation, but within fourteen days she lost 7 kilos more in weight, and she then consented to have a jejunostomy performed. This was quickly done, and within twelve days the patient was up and completely free from all suffering. Thereafter she rapidly improved; no trouble was experienced with the feeding through the fistula. Latterly she began to take a little food by the mouth, and in six months she had regained her normal weight. Six years after operation she was well in every way, had a rosy colour, and was able to live for four days on food taken only *per os*.

In commenting on the case, von Eiselberg considers it possible to exclude scirrhus cancer, or the cicatricial contraction following toxic gastritis, or "phlegmasia of the stomach." He also dismisses the supposition of a syphilitic basis, though for some time after the operation the patient had been given potassium iodide. (Patient had aborted once in the first year of her married life, and had had no further pregnancy.)

Further, the absence of pain, hæmatemesis, and melæna spoke against the presence of gastric ulceration, as palpation, at the time of operation, also did. And the final conclusion is that the case might well be included as one of the group described by Brinton, where the most marked change is found in the connective tissue elements of the stomach. The etiology is quite obscure.

By way of criticism one might quite well ask for more details before dismissing the syphilitic basis, while the question of tubercle as an etiological factor would require very careful enquiry, in view (1) of the attack of peritonitis during the patient's youth; (2) of the symptoms previously noted, evening rise of temperature and occasional sweating; (3) of the fact that patient made such a good recovery.—W. RANKIN.

GYNÆCOLOGY AND OBSTETRICS.

Cardiac Disease and Pregnancy. By Dr. E. Scipiades, of Budapest (*Volkmann's Sammlung*, 458; *Gynäk.*, 167).—As is well known, pregnancy often leads to aggravation of the symptoms in women suffering from disease of the heart through failure of compensation. On the other hand, some few women actually improve through the establishment of compensation, and cases have been recorded of women who aborted in their earlier pregnancies on account of cardiac disease, and were able to carry their later children to full time. Why the cardiac muscle should accommodate itself in some cases and fail in others is quite unknown. Dr. Tuszkai published a paper in the same series (No. 407, 1905) in which he asserted that he was able to establish a prognosis and an indication for the induction of labour by observing the difference in the pulse-rates of the patient when lying and standing. This difference and that of the blood-pressures in similar circumstances he calls the *lability* of the pulse (pulslabilität).

Dr. Scipiades combats this view, and proceeds to show that modern research has demonstrated the absence of foundation for a great part of the teaching hitherto accepted concerning the heart and circulation in pregnancy. Sahli has shown that there is no accurate method of estimating the total quantity of blood in the living man, so there is no ground for the statement that the quantity of blood is increased during pregnancy. Equally groundless is the assertion that there is a serous plethora. The hæmoglobin remains in high percentage, and if the blood is hypotonic ($\Delta = -\cdot 54$) this condition is due to the diminished quantity of katabolic products in solution. There is no evidence, accordingly, that these are causes of hypertrophy of the heart in pregnancy. Similarly, the addition of the utero-placental circulation does not increase the resistance to the blood flow; for, as Engelström and Lahs have shown, when the total length of the channel is increased by the addition of a collateral stream, the resistance in the original stream will diminish if the resistance in that of the collateral channel is greater than in the original one (*sic*). Again, the growth of the uterus does not lead to hypertrophy of the heart, for this organ possesses so much reserve force, if sound to begin with, that it can do continuous increased labour without becoming hypertrophied. In any case, this condition cannot be diagnosed by measuring the blood-pressure, by percussion, nor by any other clinical method. Pure hypertrophy, according to Sahli, does not lead to increased area of percussion dulness unless accompanied by dilatation, and Rosthorn has shown by skiagraphy that the increase of cardiac dulness in pregnancy is due to the change of position of the heart, which is pushed up by the diaphragm and made to lie transversely. *Post-mortem* investigations also have failed to give evidence of hypertrophy. The actual size of the heart varies with the bulk of the body, so there may be some increase in its size, but, as before said, there is no direct evidence of hypertrophy.

Tuszkai stated that the *lability* of the pulse disappeared in the later months, and sometimes even in the beginning of pregnancy in healthy women. This he ascribed to the normal hypertrophy of the heart. He went on to say that the recurrence of *lability* was a sign of cardiac incompetence, and was an indication for induction of labour.

Graves drew attention to the absence of *lability* in certain cases of cardiac disease, and ascribed it to hypertrophy, but Schapiro showed that it occurred when compensation was failing. Jorisenne found *lability* absent in a few women in early pregnancy, but Scipiades discounts these observations from the absence of proper precautions. Stadler found it present at the end of pregnancy.

Scipiades made several series of observations, which he publishes in tabular form. From these he deduces a normal average difference—in the various months of pregnancy—of 12 between the numbers of the pulse-beats in the woman when standing and lying, and this is within the normal physiological difference. In women with functional murmurs, otherwise healthy, similar results were obtained. In eight patients with severe valvular lesions, and with varying degrees of failing compensation, the *lability* varied from 1 to 18. Two of these patients died, and one was so collapsed as to require hurried delivery by vaginal Cæsarean section. This last patient had a *lability* of 7, and the blood-pressure was 115 mm. of Hg. when lying and 121 mm. when standing. Of the patients who died, one had a *lability* of 1, with blood-pressure 117 mm. lying and 112 standing, while the other had a *lability* of 2, with blood-pressure 112 lying and 118 standing. Scipiades is of opinion that the relation of the standing and lying pulse-rates during pregnancy is not different from that found in cases of cardiac disease in the non-pregnant state.—E. H. Lawrence Oliphant.

The Quantity of the Milk Secretion. Plauchu, of Lyons (*L'Obstétrique*, No. 3, 1908).—The author holds that the secretion of the mamma is increased almost entirely by the action of the child in sucking, and the quantity obtained by the sucking depends on its own wants and not on the capacity of the mother. In practice a woman can commonly nurse a child on only one breast, and can nurse two children on two breasts. Up to the tenth month of nursing the average maximum obtained from all the women examined was 1,225 grams of milk.—E. H. L. O.

Abdominal and Vaginal Cœliotomy. By Pfannenstiel, of Kiel (in *Volkmann's Sammlung*, No. 488; *Gynäk.*, No. 178).—In general terms the writer prefers the abdominal route on account of its many advantages, such as the accessibility of all the organs in the abdomen, a clear field of vision, radical and conservative methods can be carried out, adhesions can be dealt with, control of hæmorrhage, the covering of raw surfaces with peritoneum, the removal of secondary growths, especially epithelial growths, such as arise in connection with ovarian cystomata, which may have required *morcellement* in the course of removal. The disadvantages lie in the complexity of the abdominal wall, and in the position of the genital organs below and behind the bowels. The first may lead to hernia through the scar, the second to damage of the peritoneum and bowels. Both of these can be avoided by careful technique and by asepsis, provided always we have to deal with a patient not already septic. Pfannenstiel accordingly prefers the abdominal route in all aseptic cases of new growth, of hæmorrhage, of malformations, of *chronic* inflammatory disease, of non-malignant uterine tumours, of extra-uterine pregnancies, of ovarian and ligamentary tumours, and of complicated atresias of the pelvic organs (not mere imperforate hymen). With septic conditions the case is different. Pelvic abscess or suppurating hæmatocele, tubal or ovarian abscess adherent in Douglas's pouch, are best dealt with vaginally, as also infected myomata and other septic tumours. Provided it can be done completely, vaginal cœliotomy has the advantage that it is usually better tolerated, and rarely leaves an unsightly or troublesome scar. The primary results of vaginal extirpation of the cancerous uterus are better than those of the abdominal route; but cases of narrow (virginal) vagina, requiring a splitting of the perineum, often leave a most troublesome and painful cicatrix, and vaginal fixation of the uterus shows no lower mortality than abdominal fixation. In general terms, then, the abdominal method is to be preferred in aseptic cases, unless the operator cannot be sure of his own aseptic methods.

Pfannenstiel performs his abdominal sections through a transverse skin incision, which may be carried from one anterior superior spine to the other; the transverse incision of the fascia can be prolonged from the outer edges of the recti, so that the obliques may be split in the direction of their fibres; the fascia can be peeled up off the muscle as high as the umbilicus, and downwards to the symphysis. The recti and peritoneum are divided in the middle line. In 1,000 operations, Pfannenstiel has never required to incise the fascia vertically above the umbilicus. He sutures in four layers peritoneum, rectus, and fascia with continuous catgut, and the skin with interrupted silkworm. By this means the skin cicatrix does not stretch, becomes almost invisible, and is usually hidden by the folds of the skin. He has never had a hernia in a wound which has healed without suppuration. For vaginal cœliotomy he incises the peritoneum through the posterior fornix, except in cases of vaginal fixation of the uterus for cystocele, in which he fixes the front of the uterus to the vaginal wall below the bladder, combining this with anterior and posterior colporrhaphy and repair of the perineum. Retroversion of the uterus with adhesion is dealt with *per abdomen.*—E. H. L. O.

DISEASES OF THE SKIN.

Sporotrichosis. By H. G. Adamson, M.D. (*British Journal of Dermatology,* September, 1908).—Since the first case of sporotrichial infection of the skin was reported by Schenk in 1898, as "refractory subcutaneous abscesses caused by a fungus possibly related to sporotricha," a number of cases have been published in America and France. In the present paper the author gives a *résumé* of the literature with a full bibliography. The following are the main features brought out.

Symptoms.—Two main clinical types have been described. First, there are the American cases, in each of which the infection took place in the index finger, and was followed by a line of chronic abscesses on the arm connected by chronic lymphangitis. It was the refractory nature of these lesions which led to their being culturally examined, and to the discovery of the sporothrix. In the second group—the French cases—the lesions consisted of multiple and widely-distributed abscesses, generally hypodermic, but sometimes associated with these also dermic and epidermic lesions. One writer describes a syphiloid type and a tuberculoid type, according as the lesions simulate syphilitic gummata or tuberculosis verrucosa. These modifications represent usually only a different stage of the lesion, but lesions primarily of lupus verrucosus type have been described. One case only presented large abscesses. The hypodermic lesions form cold abscesses or gummata, varying in size from pea to small orange size. They are disseminated without apparent order in the subcutaneous tissue of the limbs and trunk. The development of the nodules is insiduous and painless, so that while small they may be overlooked. On palpation they are hard and resistant, and sometimes lightly adherent to the subcutaneous tissues. In from two to three months they soften and become adherent to the skin, which becomes at this part red or violaceus, and eventually perforated, the contents discharging as a greyish-yellow homogeneous pus. The fistulous opening enlarges, its borders become swollen and infiltrated with new small abscesses. Eventually, as the most favourable result, suppuration ceases and a violaceous cheloid-like scar remains. Incision does not lead to more rapid healing, since the same infiltration of the borders of the wound takes place. Instead of the lesions taking this course, sometimes a further development takes place: the orifice enlarges till it leaves an ulcerated and discharging surface, or a crusted or fungating infiltration, simulating tuberculosis verrucosa cutis. The lymphatic glands are generally uninvolved. It has not been clearly demonstrated that the viscera are ever infected, though this seemed probable in one case. In one case, which showed sporotrichium in the sputum, the lungs were sound. In other cases cutaneous sporotrichosis has occurred in association with pulmonary tuberculosis. Most patients, however, have been in good health except for the skin lesions. Periosteal and intramuscular abscesses and mucous membrane lesions have also been recorded.

The fungus—sporotrichium Beurmanni (the sporotrichium Schenkii is probably a different variety).—The fungus is only rarely and with difficulty demonstrated in the lesions, short or oblong rods, 2 to 5 micromillimetres by 1 to 3 micromillimetres, granular, basophilic, then acidophilic (degeneration stage), surrounded by an uncoloured areola. The fungus may be free or in phagocytes. On the other hand, cultures are readily obtained on most of the usual media. The most suitable is Sabouraud's peptone-glucose-agar (peptone chassaing, 1; glucose brute, 3·7; agar, 1·5; water, 100). It grows best at room temperature with tubes not capped. Colonies appear on the fourth to sixth day as small, white acuminate points, 1 mm. in diameter, surrounded by a white areola finely rayed. They slowly increase in size, and become convoluted and brown in colour. The saprophytic nature of the fungus has been demonstrated by its culture on caterpillars, flies, larvæ, lettuce leaves, &c., and it has been suggested that infection may take place by contact with unclean vegetables, or from the same source by the alimentary canal.

Experimental sporotrichosis in animals.—It has been reproduced in the cat, mouse, monkey, and rat by subcutaneous or intraperitoneal inoculation. The rat is very highly susceptible. De Beurmann has shown that an early orchitis in the rat after inoculation with suspected products is diagnostic of sporotrichial infection.

Spontaneous animal sporotrichosis.—This has been described in the rat, mule, and dog, thus suggesting contagion from animals to man.

Pathological anatomy.—As clinically, so histologically, the lesions present sometimes the characters of tuberculosis, sometimes those of syphilis. De Beurmann and Gougerot state that three types of reaction are present in combination, viz., (1) a lympho-connective tissue or syphiloid reaction; (2) an epithelioid (with giant cells) or tuberculoid reaction; and (3) a polynuclear or ecthymatiform.

Treatment.—It is characteristic of the lesions that they are very obstinate to surgical methods of treatment. Under the administration of iodides they rapidly disappear.—J. WYLLIE NICOL.

PUBLIC HEALTH AND INFECTIOUS DISEASE.

Certification and Registration of Death. In the September issue of the *Journal of the Royal Sanitary Institute*, there is a short paper on the above subject by E. M. Smith, M.D., D.P.H., Medical Officer of Health, City of York. Dr. Smith points out in the first part of his paper that "certification of the cause of death by medical practitioners is at present frequently unsatisfactory, being either incomplete, or, owing to the certificate not being a confidential document between the practitioner and the registrar, partially inaccurate, *e.g.*, deaths from alcoholism, venereal diseases, &c." He further points out a still more important fact, viz., that the present condition of things with regard to the burial of stillbirths is most unsatisfactory, not only from a statistical point of view, but because there is a very large open door for criminal concealment of birth. In discussing the suggested remedies for these conditions Dr. Smith advocates—

1. That the body of a person born, living or dead, after the seventh month of pregnancy, should not be buried except after registration of the certificate of a qualified medical man, or of a coroner, or of a public medical certifier (say, the local police surgeon). Also, that all stillbirths should be registered as births.

2. That all medical certificates of the cause of death for the purpose of registration should be paid for by the national exchequer, and delivered or posted to the registrar *direct and under sealed cover*. Furthermore, the law

could insist that the certificate should state that the practitioner had seen the body after death, or that he had verified the death on the signed testimony of at least two witnesses at death.—HUGH GALT.

Examination of Sausages and their Hygienic Preparation. By W. G. Savage, B.Sc., M.D., D.P.H. In the same journal appears a paper on the above subject. "Sausages are always something of the nature of a mystery" is the not too attractive beginning of Dr. Savage's paper. From their very nature they invite the use of substances which would be rejected if vended in any other way. Their preparation should be subject to considerable supervision. There are no definite guiding standards in this country as to their composition, presence and amount of preservatives, or their bacterial contents.

The meat used may be initially of poor quality; in an incipient state of decomposition; from a diseased animal; from an animal other than a pig or bullock, such as a horse. Sausages containing the latter should be distinctly labelled as such.

In Germany visceral sausages, containing no voluntary muscular tissue, are important articles of sale. They are of considerable nutritive value, but are prone to rapid deterioration, and must be eaten freshly made, while the organs used (especially the liver and spleen) are more likely than muscle meat to contain pathogenic organisms.

Bread or flour is a frequent addition to the mass used for sausages. Colouring matters occasionally, and preservatives frequently, are added to sausage meat. The most common preservative is boric acid or its compounds. Less commonly salicylic acid, benzoic acid, and the sulphites are used.

In twelve samples of sausages examined by Dr. Savage (all of which were made upon the premises and free from preservatives) for intestinal organisms, bacillus coli was found in every case, ranging from 10 to 120,000 per grm. of sausage. All the samples were made less than one day previous to the examination being made. The sausage skins employed were found to be entirely free from bacillus coli. In other cases, however, the gut used for the purpose of skins was only washed out with water several times, placed in a little salt and water, and used wet and practically fresh. This probably explains many cases of food-poisoning by Gaertner's bacillus as a result of eating sausages.

Dr. Savage details the procedure necessary for the bacteriological, chemical, and microscopic examination of sausages.—HUGH GALT.

The Life-history of Trypanosoma Equiperdum. In the *Proceedings of the Royal Society*, published 23rd June, 1908, there is an interesting paper on the above (communicated to the Society by Sir R. Boyce, F.R.S.) by J. E. S. Moore, Professor of Experimental and Pathological Cytology, University of Liverpool, and Anton Breinl, Director of the Runcorn Research Laboratories, Liverpool School of Tropical Medicine.

This paper forms a continuation of others on the same subject under the titles "Note on the Life-history of the Parasite of Sleeping Sickness," published in the *Lancet* for 4th May, 1907, and "The Cytology of the Trypanosomes," published in part i of the *Annals of Tropical Medicine and Parasitology*, vol, i, No. 3.

The authors find that the cyclical metamorphosis in the parasites unmistakably corresponded with the successive alternations of condition that characterise the clinical aspects of the malady in the host. The parasites pass through divisions until the interaction between the extranuclear centrosomes and the nucleus. From this period they proceed to the formation of latent bodies, and subsequently to the development from the latent bodies of ordinary trypanosomes once more.

Preparations of the blood from the rat during early stages of infection by trypanosoma equiperdum show the trypanosomes to be increasing in numbers through rapid longitudinal fission, accompanied by amitotic division of the nucleus and the extranuclear centrosomes. As the disease advances there is a gradual increase of the nuclear substance towards the side away from the extranuclear centrosome until the mass separates from the nucleus and passes away towards the free end of the flagellum.

The article is finely illustrated by diagrams and plates.—HUGH GALT.

Books, Pamphlets, &c., Received.

Post-Operative Treatment: An Epitome of the General Management of Post-Operative Care and Treatment of Surgical Cases as practised by prominent American and European Surgeons, together with Suggestions concerning the Technique of certain Operations with a view to securing better Post-Operative Results, by Nathan Clark Morse, A.B., M.D. Second edition, revised and enlarged. Containing 5 plates and 175 other illustrations. London: Rebman Limited. 1907. (17s. 6d. net.)

Introduction to Infectious and Parasitic Diseases, including their Cause and Manner of Transmission, by Millard Langfeld, A.B., M.B., with an Introduction by Lewellys F. Barker. With 33 illustrations. London: Rebman Limited. 1908. (5s. 6d. net.)

The Sexual Question: A Scientific, Psychological, Hygienic, and Sociological Study for the Cultured Classes, by August Forel, M.D., Ph.D., LL.D. English Adaptation by C. F. Marshall, M.D., F.R.C.S. London: Rebman Limited. 1908. (21s. net.)

Applied Physiology: A Handbook for Students of Medicine, by Robert Hutchison, M.D., F.R.C.P. London: Edward Arnold. 1908. (7s. 6d net.)

Wastage of Child Life, as exemplified by Conditions in Lancashire, by J. Johnston, M.D. Edin. Second edition. Manchester: John Heywood, Limited. 1908. (6d.)

Pulmonary Tuberculosis and its Complications, with special reference to Diagnosis and Treatment, for General Practitioners and Students, by Sherman G. Bonney, A.M., M.D. With 189 original illustrations, including 20 in colors and 60 *x*-ray photographs. London: W. B. Saunders Company. 1908. (30s. net.)

General Surgery: A Presentation of the Scientific Principles upon which the practice of Modern Surgery is based, by Ehrich Lexer, M.D.; edited by Arthur Dean Bevan, M.D.; an authorized Translation of the second German edition by Dean Lewis, M.D. With 449 illustrations in the text, partly in color, and 2 colored plates. London: Appleton & Co. 1908. (25s. net.)

Report on the Prevention of Malaria in Mauritius, by Ronald Ross, D.P.H., F.R.C.S., D.Sc., LL.D., F.R.S. London: Waterlow & Sons, Ltd. 1908.

Green's Encyclopedia of Medicine and Surgery. Vol. IX: Rhinoliths—Thermotaxis. Edinburgh: William Green & Sons. (15s. net.)

The Bone-Marrow, a Cytological Study, forming an introduction to the Normal and Pathological Histology of the Tissue, more especially with regard to Blood Formation, Blood Destruction, &c., together with a Short Account of the Reactions and Degenerations of the Tissue in Disease, by W. E. Carnegie Dickson, M.D., B.Sc.Edin., F.R.C.P.Edin. With coloured plates and microscopical photographs by Richard Muir. London: Longmans, Green & Co. 1908. (42s. net.)

Husband's Practice of Medicine, designed for the use of Students and Practitioners. Sixth edition, rewritten and enlarged by Robert F. C. Leith, M.A., M.Sc., M.B., C.M., F.R.C.P.Ed., and Robert A. Fleming, M.D., F.R.C.P.Ed. Edinburgh: E. & S. Livingstone. 1908. (12s. net.)

GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR THE FIVE WEEKS ENDING 19TH SEPTEMBER, 1908.

	Week ending				
	Aug. 22.	Aug. 29.	Sept. 5.	Sept. 12.	Sept. 19.
Mean temperature, . .	56·9°	57·2°	51·2°	53·6°	56·5°
Mean range of temperature between day and night, .	28·9°	23·0°	26·6°	28·4°	25·0°
Number of days on which rain fell, ...	1	7	4	6	5
Amount of rainfall, . ins.	0·13	1·25	0·88	1·34	1·12
Deaths registered, . . .	272	255	238	242	274
Death-rates, ...	16·5	15·5	14·4	14·7	16·6
Zymotic death-rates, . .	1·4	1·2	0·9	1·2	1·2
Pulmonary death-rates, .	3·2	3·4	2·9	2·8	3·6
Deaths—					
Under 1 year, ...	73	71	75	62	69
60 years and upwards, .	53	38	45	48	64
Deaths from—					
Small-pox, ...	...	...	...	...	...
Measles, ...	2	2	2	4	1
Scarlet fever, ...	...	1	...	1	1
Diphtheria, ...	3	2	1	3	6
Whooping-cough, . .	10	11	11	11	9
Fever, ...	6	3	2	...	2
Cerebro-spinal fever, . .	6	4	2	4	3
Diarrhœa, ...	46	29	33	26	27
Croup and laryngitis, .	1	2	1	...	2
Bronchitis, pneumonia, and pleurisy, ...	28	35	27	28	45
Cases reported—					
Small-pox, ...	...	...	...	...	...
Cerebro-spinal meningitis, .	7	4	3	4	1
Diphtheria and membranous croup, ...	15	15	8	32	23
Erysipelas, ...	27	15	20	24	22
Scarlet fever, ...	54	52	76	75	53
Typhus fever, ...	...	...	...	...	1
Enteric fever, ...	26	20	12	14	15
Continued fever, . . .	...	...	2	...	...
Puerperal fever, . . .	4	1	2	4	2
Measles,*	31	17	23	19	13

* Measles not notifiable.

Sanitary Chambers,
Glasgow, *24th September, 1908.*

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ORIGINAL ARTICLES.

HEADACHE AND OCULAR TREATMENT.[1]

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A PHYSYCIAN, for whose opinion I have the most cordial regard, recently in conversation raised the question as to whether the fitting of glasses really relieved severe headache. Till the time of that remark I had never had any doubt on the subject, but since that interview, which took place about April of the current year, I have looked into the thing a little more particularly. That the wearing of spectacles does not always set the matter right is perfectly true, and before I close I shall return to that subject and have something to say upon the causes of failure. In the first part of this communication I intend to deal with a few concrete examples, thereafter I shall discuss the general question as to the forms of headache which can be relieved by ocular treatment, and I shall conclude, as already indicated, by some observations on the causes of failure.

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[1] Read at a meeting of the Medico-Chirurgical Society of Glasgow held on 2nd October, 1908.

Pursuing this plan, in the first place, I beg to submit the following cases for consideration:—

CASE I.—The first case that I wish to submit is that of myself. All through my school career and all through my university training I was much troubled by frontal headache. On two occasions, once when I was at school and again when I was at college, I was measured for glasses in Glasgow, and on both occasions I was told to wear a 24-inch convex lens. After I had graduated I was at Marlborough in the year 1886 with my uncle, and he observed my great inability to read or write on account of difficulty of vision notwithstanding the said correction. He happened to be personally acquainted with the late Sir William Bowman, and he strongly advised me to see Bowman. I journeyed from Marlborough to London and saw Sir William, who at once said I had got in each eye a dioptre of astigmatism against the rule, and prescribed glasses accordingly. After Sir William had fitted me it was at least two months before I was thoroughly well. My visit to Sir William took place about the middle of July of that year, and I wrote to him about a month afterwards to say that, although I was greatly better, I still suffered slightly from headache. His reply was that he was to be in Edinburgh on a certain day in the following month, and that he wished me to come through and see him there. He was satisfied with my condition, and told me that if I persevered in wearing the glasses the headaches would ultimately disappear, which they very soon did. Since then I have been entirely free of headache.

The following cases have been investigated since the conversation referred to above. They are only a small portion of those which I have seen, but I think they are fairly satisfactory. Unfortunately, a large clinic is productive of anything but accurate work. There is no man living who can investigate more than a very few cases thoroughly per day, and I always estimate that a proper testing will take about an hour. So, in an institution like the Glasgow Eye Infirmary, where there are a large number of patients to deal with, the testing must be rough, and unfortunately the surgeons in charge have little time to critically examine their own work. I myself have been able to do so only at one or two points, and particularly as regards the influence of bacteria in operation work. Therefore, for the present purpose, I have not drawn at all from the infirmary records, but merely submit a few cases from my private clinic.

CASE II.—The next case that I would mention is that of a doctor practising in a town in Dumbartonshire. Three or four years ago he suffered very constantly from headache while endeavouring to read or write. At that time I fitted him with sphero-cylinders. I saw him on 14th June of this year, when he assured me that since he got these glasses headaches have been to him entirely unknown. He is able to read and to write and to conduct his business without the slightest trouble. He attributed his recovery from headache entirely to the wearing of the glasses, and the proof is that while wearing them he never has any trouble, but should he be without them, even for a short time, the headache at once begins.

Case III.—The third case is that of a lady whom I saw on 24th June of this year. She is the wife of a medical practitioner in this city. About three or four years ago her husband sent her to see me on account of severe frontal headache. On examination I found her to have an astigmatism in each eye of about 2½ dioptres. Correction with concave cylindrical lenses gave her $\frac{6}{6}$ of Snellen. These glasses were prescribed and the headaches at once disappeared. She has had no trouble since that time till within the last few days. The occasion of her consulting me in June, 1908, was that she suffered slightly from headache while motoring. I made a fractional change in the glass, and I quite expect to find that that little difference will put her right.

Case IV.—The fourth case which I wish to discuss is that of Mrs. M'C., a patient from Rothesay. This patient suffered for many years from severe headache, and was sent to me by one of the gentlemen in practice in that town to have her eyesight investigated. I first saw her in the year 1902, when I found that she had a considerable amount of hypermetropia. That was duly corrected, and since that time she has not had any return of her head trouble. I again saw her on 23rd April of this year, when she informed me of this. She had found a little difficulty for near-at-hand work, which was duly explained by the fact that she was becoming presbyopic and required two pairs of glasses, one for distance and the other for near.

Case V.—Miss M'D., residing in Glasgow. I first saw her on 13th October, 1902. Before that time, patient had very severe headaches, but since then, and I saw her so recently as April, 1908, she has had no trouble whatsoever from headache. She had a high degree of hypermetropia with a moderate astigmatism in the right eye; a slight hypermetropia and a very high astigmatism in the left eye.

Case VI.—Miss C., residing in Glasgow, consulted me for very severe headache, especially at the back of the head. I saw her on 14th May, 1908, when I prescribed spherical lenses of 4 dioptres. To the lens for the left eye I also added a slight cylinder. On 2nd June she returned to say that the headaches had completely passed off and that she was perfectly free of them.

Case VII.—Another case came from Sanquhar. She had suffered for a considerable time severely from headache, and in the year 1903 was sent to me by Dr. Jackson to have her eyes examined. I saw her during the currency of this year, when she stated that, since that time, she had been absolutely free of headache till a few months ago. When I re-examined her, I found that she was becoming presbyopic, as her age was over forty.

Case VIII.—So recently as 1st June of this year, I saw a lady, Mrs. P., by name, who was prescribed, for near-at-hand work, a spherical glass of + 2 for each eye, and to the right was added a cylinder of + 0·5 dioptre. On 24th June, I received a letter from her in the following terms:—"Mrs. P. writes to let Dr. F. know that she has benefited very much from the spectacles, and that her headaches are very much better."

Case IX.—One other case is indicated by a letter which I received on 6th or 7th May, 1908. The writer says, "I am pleased to inform you that since my first visit to you in March, 1902, when you gave me my spectacles, I have suffered much less from headaches than previous to that date. Before Dr. —— sent me to you I had very bad headaches, also felt sick, but without doubt the spectacles have very much relieved me. Often on getting up in the morning I feel inclined to have a headache, but on putting on the spectacles I feel relieved at once."

These are a few cases which I have culled since the end of April when we had that conversation. They might have been added to indefinitely had I the leisure to collect material. They are all from my private clinic, and I confess, in certain cases where the headaches are unquestionably ophthalmic, that if they are not relieved, then it means that the correction has not been altogether a proper one.

Case X.—One other communication which I have received is from the father of a young lady on whom I operated for exophoria. Therein he says, "I have pleasure in stating that since you operated on my daughter's eye, ten years ago, she has had no return of the severe headaches she had prior to that."

I merely mention this case. I shall later have something to say about these various anomalies which are classed under the heading of heterophoria. If now it be admitted that the preceding remarks afford *prima facia* evidence that eye-strain is often the cause of headache, then there are one or two questions which fall to be discussed. These chiefly are concerned with the nature of the ocular conditions that cause headache. In mentioning this subject to my class, I have always enumerated certain circumstances which are apt to give rise to headache. First, and most obviously, errors of refraction ; secondly, insufficiency of accommodation ; thirdly, badly centred spectacles; fourthly, the various forms of heterophoria; fifthly, ophthalmic surgeons often see cases of frontal headache which are sent to them for correction, when really the condition is one allied to migraine—I need not say that even the most careful correction will not give complete relief in such a case; sixthly, every now and again I see a patient who comes to the clinic on account of headaches, but who ultimately turns out to be the subject of disease in the frontal sinus or in the antrum of Highmore. I would like to take up in some slight detail these various causes.

To begin with, it is to be observed that not every person afflicted with errors of refraction suffers from headache. I myself have often seen high degrees of hypermetropia, where the patients assured me that they never had such a thing in the whole course of their lives. On the other hand, I sometimes find with a very slight error of refraction, such as a dioptre of astigmatism, that in certain patients it gives rise to a considerable amount of headache, which entirely disappears when the error of refraction is corrected. Some of these cases are tolerably easy of explanation. Take, for example, a man living in the country, who is following the life of a farmer, and who has a hypermetropia of 4 or 5 dioptres with good visual acuteness in each eye. Very often a man of that sort escapes headaches altogether, although not invariably. The same man, if set to book-keeping or to study, will most likely suffer from headache, and here great individual differences seem to exist. A point on which I always lay special stress with my elementary students is the concurrency of the ranges of accommodation and of convergence. Take, for example, an emmetrope. When he looks at a great distance the axes of vision are parallel and he does not converge. When he looks at a distance of 1 metre, he converges 1 metric angle and accommodates 1 dioptre. When he looks at a distance of $\frac{1}{2}$ a metre, he accommodates

2 dioptres and converges 2 metric angles. When he looks at $\frac{1}{3}$ of a metre, he accommodates 3 dioptres and converges 3 metric angles.

To put the case of the emmetrope in the most general terms, when the fixation is $\frac{1}{N}$ of a metre, he accommodates N dioptres and converges N metric angles.

Now, in the hypermetrope, the conditions are different. No hypermetrope can see at a distance without accommodation, and associated with the natural tendency to accommodation there is the natural tendency to convergence. Some people cannot overcome the impulse to convergence, and consequently they become afflicted with convergent squint. Others are able, in the interests of binocular vision, to disassociate the functions of accommodation and convergence, and to accommodate without converging. It is this act of disassociation which I think is the cause of the ophthalmic headache in hypermetropia. In this affection, the accommodation, as it were, goes in advance of the convergence. Take, for example, a case in which there is a simple hypermetropia in each eye of 3 dioptres. Such a patient will see distinctly if he uses 3 dioptres of accommodation, and when he looks at a distance he will use that amount without converging, keeping the visual axes of the eyes parallel. When he looks at a point 1 metre from him, he must accommodate 4 dioptres and converge 1 metric angle. When he looks at a point $\frac{1}{2}$ a metre from him, he must accommodate 5 dioptres and use 2 metric angles of convergence. To put the case in general terms, when the fixation is $\frac{1}{N}$ of a metre from him, then the accommodation used must be $3 + N$ dioptres, and the convergence must be N metric angles.

From this we see that the accommodation and convergence are no longer similar, but that the accommodation must be more than the convergence. Many people seem not to be able to disassociate these two functions; a great number of people can; but in a considerable number of them, although not in all, this disassociation is accompanied by severe headache.

In the next place, I would like to discuss the conditions in myopia. Let us investigate the case of a person who is myopic, say, to the extent of 3 dioptres. On distant fixation, the patient does not see well. He, however, keeps the axes of the eyes parallel. For fixation at $\frac{1}{2}$ a metre, he converges 2 metric angles, but still has no clear image on either retina, and does not accommodate, for the point of fixation is at a greater distance from his eyes than his distant point of distinct vision. Again, when he fixes at ⅓ of a metre, he converges 3 metric angles, but in so far as his fixation point is exactly at its distant point of distinct vision, he does not accommodate. When he looks at a point ¼ of a metre, he converges 4 metric angles, and for the first time begins to accommodate. He accommodates 1 dioptre. Thus it is seen that in this case the accommodation and convergence are not similar, as in emmetropia, but that more convergence is required than the normally corresponding amount of accommodation. This state of affairs does not frequently give rise to headache, but I have known it to do so. I have vividly before my mind just now a lad, a clerk with the Caledonian Railway, whom I saw in the Royal Infirmary Dispensary, who had 2 dioptres of myopia, but who suffered very much from headache. The careful correction of this small amount of refractive error at once cured him of his distress. I imagine it did so by restoring the harmony between the range of convergence and the range of accommodation. I was much interested at the time to learn that, so far as he knew, he was the first person in his family history to be affected with myopia. There was no history of it in any of his ancestors, and his brothers and sisters seemed free from it. I have seen a few cases like that, but they are not common. Headache, as an accompaniment of myopia, uncomplicated with astigmatism, is in my experience rare.

In astigmatism the condition is a little more complicated. With astigmatism there is the general error to be considered, either hypermetropic or myopic, and in addition to that there are, I believe, special sectional contractions of the lens which the patient makes in order, as it were, to correct his astigmatism. If this view be correct, and there is much evidence in its favour, the lens, in compound hypermetropic astigmatism, undergoes a contraction to correct the general hypermetropia, and probably in most cases there is a secondary contraction, or, if not that, at anyrate a tilting of the lens in an attempt to correct the astigmatic error. In my experience, astigmatism is much more liable to give rise to severe headache than a plain hypermetropia of moderate amount, and yet it has to be observed that, in persons who are not what may be called neurotic, or who live a tolerably free out-of-door life, there may be a fair amount of astigmatism without any headache. When headache occurs, there is probably a nerve element in it, or what we may call a neurotic element, as well as an error of refraction, for we sometimes find persons who have a high degree of refraction error without any headache, and others who have a very trifling error who suffer considerably. The three conditions, then, which come to be of importance are—(1) the precise error and its amount; (2) the mode of life of the patient; (3) the absence or presence of an unstable nervous system.

Another defect of refraction which constantly gives rise to headache is a lack of proper accommodation. People begin to get presbyopic about 40 years of age, and, generally speaking, the rule which I adopt in combating presbyopia is the following:—I first make the patient emmetropic by a suitable correction, then I add 1 dioptre of convexity for every 5 years that the patient is over 40. To put the rule into general terms, it may be said: suppose a case has M dioptres of ametropia, then between 40 and 45, for near-at-hand work, I usually give M + 1; between 45 and 50, M + 2; between 50 and 55, M + 3; and between 55 and 60, M + 4. No further addition is necessary, for that should give clear vision at 10 inches. Few people, in my experience, take their full accommodative correction at once, and, as I shall afterwards point out, that seems to me to be one of the causes of failure to relieve headache by optical correction.

Now, as regards badly centred spectacles; possibly it would have been better to have discussed these after we had considered the various forms of heterophoria, but as we are dealing with optical matters at anyrate, it is perhaps, allowable to take it here. I know from personal experience that headache is sometimes relieved by the proper centration of badly centred glasses; I mean by that, that I have occasionally seen a patient who has had his or her errors of refraction carefully and, so far as I observed, accurately tested elsewhere, but yet has experienced little or no relief of the pain in the head. I have on certain occasions found that the proper centration of the glasses has put that right. The subject is a very large one, and a great deal more should be said upon it than I have time to say or perhaps than you have time to hear. Bad centration may be said to arise from two causes, first, displacement of the lens centres; second, rotation of the lenses round their horizontal axes. They are both important, and in my opinion are productive of much discomfort. Convex and concave lenses are most easily understood; therefore, for elementary consideration, they alone will be considered. I would respectfully refer those who wish full information on this subject to the work of Mr. Percival, of Newcastle-on-Tyne, than whom there is no higher authority anywhere. He is a gentleman whose profoundness of knowledge in this special department of physiological optics is acknowledged by all who are competent to form an opinion, and is the envy of not a few.

A reasonably good account of the decentration of lenses is also given in the last edition of Mr. Maddox's book on *Ocular Muscles*, and to that I may refer again. Meantime, limiting myself to the two lenses which I specified, it is to be observed that unless the axis of a pencil of light coincides with the principal optical axis of a convex or concave lens, then there is not only refraction, but there is displacement. The further out from the axis of the lens that the pencil is incident, the greater is the prismatic effect. Here it may be pointed out that the principal axis of a convex lens is the line passing through the optical centre of the lens, and also through the centres of curvature of its surfaces. A pencil of light incident on the lens, the axis of which coincides with the principal axis of the lens, undergoes refraction so as to form a definite image on the principal axis of the lens. On the other hand, if the axis of the pencil of incident light is not approximately coincident, although parallel with the axis of the lens, and the point of incidence is at some considerable distance from the lens axis, then a well-defined image may be formed, but there will always be a considerable amount of displacement, and the farther you go on the lens surface from the axis, the greater is that amount of displacement. Occasionally advantage is taken of this fact to give the patient the benefit, not merely of the correction of an error of refraction, but also of the correction of heterophoria.

Such an arrangement is called a decentration. As already indicated, this subject has been very thoroughly investigated by Mr. Percival, of Newcastle-on-Tyne, and by others. The formula which I myself used to go by was that of Holden, which I got from an American source, and in the main it was found to answer quite well. The more recent work, however, of Mr. Percival has superseded previous writers. The rule which now controls my own work is very well stated by Maddox in his recent edition (pp. 231, 232, 233). It is based on the fact that a gradient of 1 degree is approximately 1¾ in 100. Therefore, as he says, since a lens of 1 dioptre has a focal length of 1 metre, it will have to be decentered 1¾ centimetres to obtain 1 dioptre of deviating effect on light. Not infrequently we find patients wearing spectacles which are most defective as regards centration; the axis of vision of one or of both eyes cutting the spectacle glass at such a distance from the principal axis as to cause a considerable amount of muscular strain in an effort to get binocular vision. When we come to deal with heterophorias, we shall find that the plan of decentration has only a limited application.

Another frequent defect in glasses is that the visual axis does not cut the plane of the glass at approximately a right angle, but at a more or less oblique one. When a pencil of light passes through a convex or concave lens in an oblique manner, then there is no longer a well-defined image, but the refraction is, as it were, through a sphero-cylinder.

I take, for example, the lenses which make me emmetropic, and which easily give me $\frac{6}{5}$ of Snellen's scale. I rotate these glasses round their horizontal axis for a matter of perhaps not more than 20 degrees, and I find, with even so small a rotation, that the visual acuteness at once sinks to something like $\frac{5}{12}$ of Snellen. The glasses themselves are only + 1 dioptre cylindrical; if they were stronger, the fall in the visual acuteness would be very much greater. It is thus to be remembered that, when you are dealing with an oblique refraction, it must necessarily give rise to the same condition as if the glass used were a sphero-cylinder, and consequently, except in the very rare instance in which the obliquity corrects a natural astigmatism, the inconvenience occasioned must be considerable. No doubt the faulty refraction may be compensated to some extent by the sectional contraction of the lens, which, in my opinion, sometimes exists. Such oblique refractions are not treated at all in text-books of ophthalmology. So far as I have observed, they generally are discussed in treatises on geometrical optics. From the time that I was in Donders' laboratory, I was well aware of the general phenomenon, but the first definite information I had on the subject was when I read an elementary treatise on geometrical optics by Aldis. I found a tolerably adequate discussion of oblique pencils on pp. 34 to 45 of that book. I find that it was published in 1888, and I remember reading it shortly after it appeared.

Now, if you examine a number of people who are wearing glasses, especially pince-nez, straight-bar glasses, frameless eyeglasses, I think you will find, that in many of them, the plane of the glass by no means cuts the line of sight at approximately a right angle, and that there is a greater or less amount of inclination. Where that is the case, there must always arise a considerable amount of irritation, and the stronger the glasses the worse the defect. That is why I personally prefer spectacles to any form of pince-nez. The inclination in the rigid frame of a properly made pair of spectacles is very much less than with any form of eyeglass that has as yet been invented. I have, however, seen one or two pairs of frameless eyeglasses which have fitted tolerably well.

Just one other point before we leave spectacles. That is, the index of refraction of which the lens is made is not altogether an unimportant matter. Lenses are ground to certain patterns, that is to say, the surfaces are given a definite curvature, but, of course, that curvature only gives a certain power of lens for the index of refraction of the glass of a particular quality. If it be less than that amount, the lens will not be so strong as is supposed; if it be greater, then it will be stronger. Hence, it is not advisable to order special kinds of glass, the index of refraction of which is unknown to the person who is about to grind the lenses.

In the next place, I have no doubt whatever that these defects, which are generally classed under the name of heterophorias, are productive of considerable disturbance, yet, in my experience, few persons are examined for this condition either by physicians or by ophthalmic surgeons. There is scarcely a month passes but what I find some patient or other who has been again and again tested for glasses for the relief of headache, and slight alterations made, in the hope of relieving it, but without having the muscular balance tested, and in whose case the correction of a heterophoria has put the patient right. The subject is a huge one, and it would make a greater demand on space and time than the limits of this paper admit of; still I think I can put the gist of the matter in comparatively few sentences. The heterophorias which are most easily understood are those of esophoria and exophoria. I propose to discuss these in some detail, and only briefly refer to the vertical forms.

Exophoria and esophoria will be more easily understood after a short discussion of the range of convergence. Granted a man with good vision in both eyes, for distant fixation the visual axes are parallel. If he have binocular vision at 1 metre, then he must converge approximately 1 metric angle; if at ½ metre, 2 metric angles; if at ⅓ of a metre, 3 metric angles, and so on. I personally class as exophorias all patients who have not got a sufficient range of convergence to allow them to read in comfort.

Unfortunately, in this country we still must use the linear measurement of the inch, for most people still think in inches and feet, and there is some little trouble in translating them into the metric scale. For convenience of reckoning, we generally take the metre as being 40 English inches. Thus, if a man has binocular vision at 40 inches, he uses 1 metric angle of convergence; if at 20 inches, he uses 2 metric angles, and so on. Now, suppose an individual requires to work at 16 inches from his eyes, that by itself would require him to use for binocular vision a convergence of 2½ metric angles, but he would require to have at least 3 in reserve. If I remember rightly, that is the figure given by Landolt, a gentleman whose researches have added enormously to our knowledge of muscular conditions. In my own experience, that, as a rule, is not quite enough in certain people, although it is ample for most. Now, that would mean that he must have altogether 5½ metric angles at least, or even more for comfort. His near point of binocular fixation would thus require to be approximately $\frac{40}{6}$ inches, nearly 7. Unless he has that amount he has discomfort. Take the case of a man who requires to work as close as 10 inches. That man would require to have his near point of binocular fixation at a not greater distance from his eyes than 6 inches. So far as I am aware, the best instrument for testing this binocular point of convergence is Landolt's ophthalmo-dynamometer. There are other methods of measuring which I sometimes employ, but that is the one which I always teach junior students to use, and which I find to be about the best in practice.

Now, there is no doubt whatever in my mind that defects in this range of convergence are a frequent source of ophthalmic headache. The patient quoted above, No. 10, was an instance in point, and I could lay my hands just now on notes of about a dozen of cases where relief of persistent and long continued headache had been secured by the proper treatment of a defect in convergence. There are at least three distinct methods of remedying such defects. The first is, as noted above, the decentration of the spectacles which the patient wears. That, of course, involves that he has such an error of refraction as requires correction. The second is the wearing of prisms with the apices out, and where the error is not greater than can be overcome by a prism of 1½ or even 2 degrees of minimum deviation before each eye, I think that to be quite a legitimate mode of treatment, if the person wear the glasses absolutely constantly. The third method, the one which in the main I prefer, is the advancement of one or other of the internal recti; the particular muscle to be advanced being determined by the investigation of the fields of fixation. I never resort to operation immediately after seeing a case of this kind, for I am aware that sometimes, by proper tonic and hygienic treatment, the condition may improve, and render operative treatment unnecessary. Still, I often find cases where operation is refused, and in which the patient continues to suffer notwithstanding all the treatment employed. About a year ago I had such a patient, jointly with Dr. M'Clure, a girl who had suffered considerably from headaches, and who had run the whole gauntlet of treatment for their relief. She was made absolutely well, by the simple operation of advancement of an internal rectus muscle, an operation which is perfectly easy, and for the most part perfectly safe. These observations must suffice for the consideration of exophorias.

I wish now to make a few remarks on esophoria. To begin with, there are many people who have difficulty in keeping the visual axes parallel for a distance. I examine almost every patient in my own rooms with a Maddox rod, and all but invariably find on distant fixation that a person who has a hypermetropia, which has not been corrected, has a slight amount of esophoria. The plain image and the blurred one are placed homonymously to each other; that is a defect which generally passes off with the correction of hypermetropia. Occasionally, however, it does not, and the strain put upon one or other of the external recti, to get binocular fixation for a distance, is sometimes the source of headache. Here the defect may generally be corrected by decentration of the convex glass used to correct the hypermetropia. Occasionally one finds a case in which there is no hypermetropia, but in which this defect is present. When that is so it can, as a rule, be remedied by treatment with prisms, the apices of which are placed inwards, or by operative treatment. In the main, I personally prefer to operate, for if I succeed, it relieves the patient of the inconvenience of wearing glasses.

One other set of phenomena must be mentioned, and that is what I call the absence or restriction of the latent powers of divergence. If I mistake not, many authors call this a restricted range of negative convergence. The phenomena here do not essentially differ from those discussed under esophoria. If a person with healthy eyes be made to look at a distance at a suitable object, such as a lighted candle, with both eyes open, under ordinary circumstances there is binocular fixation. If now, a weak prism be put in front of one eye, with its apex outwards, there is for a moment, diplopia. That is only temporary, however. The external rectus is usually called into play, the anterior surface of the eyeball is rotated slightly outwards, and binocular vision is re-established.

While this is true of a person using weak prisms, it is by no means true when a strong prism is used, for then the diplopia remains. A healthy person, however, will easily overcome a prism of 2½ or even 3 degrees of minimum deviation, with the apex outward, so as to preserve binocular vision, but not a greater amount. The provision here is obvious. If the external recti were kept on a constant strain, then they would soon get fatigued, and there would be diplopia. The parallel position requires that they have a certain amount of their power in reserve, and thus we find that in health that power enables them to overcome a prism of 3 degrees minimum deviation, with the apex out. When that is the case, then distant fixation gives rise to no trouble. When, however, this latent power of divergence is seriously diminished, and the muscles are kept on their maximum tension to ensure binocular fixation for distance, then it is quite certain to give rise to headache. I have myself on several occasions —three I distinctly remember—absolutely removed severe ophthalmic headache by advancing an external rectus muscle. The range of convergence, both positive and negative, should invariably be taken. When a patient suffers from ophthalmic headache very frequently, when the malady is not explained by an error of refraction, it is so by an error of convergence, positive or negative, and yet hundreds of patients are supposed to have had their eyes examined, and in whose cases no attempt has been made to investigate this important matter.

The vertical heterophorias are not essentially difficult, but they are a little more complicated than the lateral ones. I have twice in my lifetime operated for a vertical heterophoria due to defective superior oblique. On both occasions I advanced the inferior rectus of the affected eye. Some text-books recommend for this defect the tenotomy of the inferior rectus of the other eye, which, to my mind, is little short of *mal-praxis*, and I think only shows that a few authors have not yet realised the physiological conditions regulating the treatment of the various forms of strabismus.

Indeed, a sound knowledge of such investigations seems to be but scantily diffused. I do not ever remember to have seen in a medical ward or in a medical dispensary the apparatus necessary for testing convergence and latent divergence, and yet the information afforded by such investigations is frequently of importance. Even where better things might have been expected, we often find defects. Some years ago, when Maddox, by his book, popularised in this country muscle testing, he recommended a special tangent scale.

In one clinic in the South, which I happened to visit, I found this tangent scale placed more than half-way up towards the roof, instead of being, as it should be, approximately on a level with the patient's head. A mistake of that kind of course simply indicates that the person or persons responsible for such a position have not seriously studied the matter at all. I remember the late Dr. Finlayson took a considerable interest in such testing, and in my early days, when I had the privilege of giving demonstrations in his wards, at his request we gave one on the testing of the positive convergence, but apart from that I do not remember ever to have seen in my student days prisms used in any other medical ward in the Western Infirmary or in its dispensary, and I should be somewhat interested to find how far they have come into general use. As a student I never saw them at the Glasgow Eye Infirmary, and I did no practical work with them till I went to Landolt and to Snellen. My feeling is that there is no part of ophthalmology more closely allied to medical practice than muscular testing.

No doubt the importance of muscular treatment has been over-estimated; I think particularly is this so in America. An author there at one period expressed his conviction that many forms of epilepsy might be cured by muscular advancement. It is quite true that the muscular balance is defective in many epileptic patients, but that is a *post hoc* not a *propter hoc.* Unquestionably there was much exaggeration as to the good effect produced by muscular treatment, but at the same time it is perfectly clear to anybody who has investigated the facts that often the greatest relief is to be had by operation, by prisms, or by the decentration of spectacles.

In conclusion, I should now like to offer a few observations on the causes of failure. To begin with, it must not be forgotten that ocular conditions are only one of the many causes of headache. Just the other week a lady came into my room to be measured for spectacles. She told me she had consulted me five years ago on account of severe headache, that I had ordered spectacles, and told her at the time that I did not anticipate that the correction of her errors of refraction would relieve her of headache. That opinion had turned out unfortunately to be but too correct. The diagnosis which I made was one of migraine, and I think events have shown that it was a correct one. I myself certainly see a good number of patients every year who are similar to that. Not infrequently we are consulted by patients who have suppuration in one of the cavities bordering on the orbit. Frontal sinus disease is a very frequent cause of headache which is mistaken for ophthalmic headache. Probably the same remark holds true for suppuration or disease in the sphenoidal sinus. Although I personally have not diagnosed a case of that affection, yet the writings of Panas and many others leave no doubt that it often occurs and that it may be the source of severe headache.

Cases, however, unquestionably occur in which the measurement of errors of refraction or of convergence apparently do not relieve the headache. These merit careful consideration. Not infrequently the defect lies with the patient himself or herself. An accurate measurement will take nearly an hour to do, and yet sometimes a patient will rush in and expect to be measured in the course of twenty minutes on his way to catch a train.

Measurements done in a hurry like that can never be relied upon, especially in youngish persons. Probably one of the chief sources of disappointment is the function of the accommodation. Errors of refraction of a hypermetropic character invariably involve the function of accommodation, and, as is well recognised, unless this function is in abeyance the actual error of the patient can only be roughly ascertained. If a measurement has been made without paralysing the accommodation then it is not a correct one, and may not give the relief which was expected. The chance of failure is greater the younger the patient.

Again, in cases of astigmatism, even in myopic astigmatism, I believe that there is a secondary contraction of the lens or a rotation of it in an effort to correct the error. Unless at the time of the measurement care is taken to paralyse the accommodation the correction will be only approximately accurate. Further, when glasses have been selected so as to correct the error when the accommodation is paralysed, then directly the effect of the mydriatic passes off the accommodation again begins to play, and there is always the chance that the combination of accommodation and glass may not so suit the patient as to give relief to him. This is particularly true when a person first begins to wear an approximate correction. In my own case it took a couple of months before the glasses arranged by Sir William Bowman began to relieve me, and my experience is similar to that of a great number of other people. There is just this difference, that I followed Sir William Bowman's directions absolutely faithfully. A considerable number of patients never give the thing a fair chance.

Then, again, in correcting for presbyopia; if you give the full correction of Donders' table you will find that patients at first complain that the objects have to be held too near. This is a very common experience, and consequently they don't use the glasses sufficiently freely. Occasionally a patient is given in to and a somewhat weaker glass is prescribed. with the result that before long the accommodation again fails and the headache returns. Lastly, the new correction of the errors of refraction may disturb what has been the usual relationship between convergence and accommodation for the particular patient, and thus often increases the disturbance, which brings me to the last item of this communication, as to the training necessary for a man who is to practise this branch of the profession.

Just the other day I saw a prescription for glasses given in Ireland, and on it was written, "Centre very carefully." In other words, the surgeon in this case left one of the most important factors to the tender mercies of the spectacle vendor. What would be thought of a naval architect who in drawing up the specification for a vessel gave a general direction to the builders to put the engine and boilers in the proper place? That is precisely analogous to the matter under consideration.

The General Medical Council see to it that a man who intends to become an ophthalmic surgeon shall take full courses of midwifery, but they do not insist that he shall have a competent knowledge of those subjects which are the basis of a very large part of his special work. To my way of thinking a man cannot read the best books on the higher but essential parts of ophthalmology unless he has a good knowledge of plane trigonometry and is familiar with some of the ideas contained in the calculus. I do not mean that he must be expert at differentiating and integrating, but certainly he should have some knowledge of the nature of limiting values and of approximations.

Notwithstanding the want of proper training there have always been a large number of men well suited for the work. That number would no doubt be augmented did the General Medical Council decree that in future those who intend to follow this branch of the medical profession shall be properly trained for their work.

Elsewhere I have formulated the conclusions at which I have arrived on this important subject. To my mind the question has become all the more urgent since of recent years many spectacle sellers have undergone a certain although an entirely inadequate amount of training. I should, however, be sorry to think that some of them are as regards optics better equipped than are a few ophthalmic surgeons. Yet as matters stand at present the thing is quite possible. Ophthalmic science properly so called should rest on a triple basis, viz., physiology, pathology, and physics, and the last is by no means the least important. The relationship of the spectacle vendor to the surgeon should be that of the builder to the architect, that of the pharmaceutical chemist to the physician.

AN OBSTETRIC DIARY OF WILLIAM HUNTER, 1762–1765.

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(*Concluded from* p. 256.)

Chapter IV.

The Medical and Medico-Social Aspects of the Diary.

The date upon which the birth of a child might be expected was reckoned in 1762, as now, from the time of the cessation of menstruation. In the case of Queen Charlotte's first pregnancy, we are told by Hunter that the last "menses" were on 27th October (1761), "from which therefore the reckoning was to commence." By the usual calculations, the birth ought to have occurred on 3rd August, 1762, but, notwithstanding the exalted rank and the dignities awaiting the expected heir, he did not arrive until nine days after that date, upon "the glorious twelfth" of later years. How many times has history repeated itself among all sorts of people and in all conditions of society; how many weary mothers, doctors, and nurses have longed for the first signs which herald the approach of the tardy baby! The years have come and gone, and still we bewail the intolerable uncertainty of midwifery practice. Obstetricians will hold in eternal honour the discoverer of a serum, possibly placental in origin, the administration of which would enable the onset of labour to be produced at a definite, desired, and convenient hour. The varied benefits accruing from such a serum can be realised after a moment's reflection, but, alas! the secret still "lies deeply buried from human eyes," and, until its discovery, practitioners of the obstetric art must, above all men, cultivate with assiduity the virtue of patience.

The diary goes on to let us know that, when about mid-term, it was supposed that the Queen had "quickened" and a few apparently unimportant symptoms were causing some annoyance, she was bled to the amount of 6 ounces. That celebrated "bleeder," Cæsar Hawkins, performed the operation, as he did on subsequent occasions, and, although the fact is not stated, it is certain that one of the court physicians was also present.

Here it may be of interest to remind ourselves how formal and ceremonious was the etiquette in the eighteenth century when blood-letting was performed upon a royal, noble, or wealthy lady. A surgeon operated, but in the presence of a physician who had previously prescribed. A handkerchief was, first of all, placed over the patient's head, so that she would not see the blood, and then the arm was firmly bound above the elbow by a broad tape. Next, a ball of worsted was placed in her hand by the physician, and she was told to squeeze it so that the veins of the arm would become prominent. The surgeon then opened a vein with his lancet, and the physician, with whom it was a point of honour to spill no single drop, adroitly caught the blood in a basin which he held in such a manner and at such a distance as was the result of long experience. When he was satisfied with the quantity of blood abstracted he notified the surgeon, who then applied pressure and bound up the arm. Taraxacum was then administered along with Rhenish wine or broth in which borage had been steeped. All the rules having been duly observed, the scene ends with the departure of the physician and the surgeon and the meditations of the victim, "bled" in more senses than one.

Twice in the diary it is reported that the Queen was bled, to the amount of 6 ounces and 5 ounces respectively. She disliked the operation, Hunter says, and apparently she submitted to it with reluctance. Doubtless she had a hard struggle to avoid it so long as Hawkins, with whom it was a panacea for all ills to which flesh is heir, was her surgeon. The King also showed commonsense and courage in saying that "he saw no occasion for bleeding," as it was then almost universally practised, and to deny its usefulness under any circumstances was rank heresy. Many healthy persons, especially in country districts, even until fifty or sixty years ago, were bled regularly two or three times a year, generally for convenience' sake on market days. Blood-letting was, moreover, very frequently performed during pregnancy many years after 1762, for almost every troublesome symptom whether the cause was trivial or serious.

During her first pregnancy the Queen suffered for a time from a cough, the cause of which, it is interesting to note, no attempt was made or could have been made to diagnose. Mr. Hawkins, the Sergeant-Surgeon to the King and Queen, who was unable to do much without consultation with a physician, desired Dr. Hunter's assistance, and this cough therefore was the occasion of the latter's first professional visit to the Queen.

He felt the pulse, thus following the time-honoured custom handed down from early ages, and he tested as far as possible the temperature of his patient's skin. Many years had to pass before the clinical thermometer was discovered, and the presence of fever and its degree could only be conjectured then through the medium of the physician's hand. The stethoscope, which advanced so signally the science of physical diagnosis, had not been conceived in Hunter's day, Laennec, that famous son of Brittany, not seeing the light till 1781. Auenbrugger's work upon *Percussion* had been published in 1761, probably too recently to have been studied or even read by many British physicians. Certainly no one could, in the following year, have yet realised how great was the value of this new method of diagnosis. The exact nature and causation of the Queen's malady were therefore perforce left to the imagination of the medical advisers as they are to ours, but, as regards treatment, blood-letting was, of course, the sheet-anchor. Much more efficacious were the prescriptions of a soothing liniment and purgatives. "Air and moderate exercise" were also recommended, and these remedial agents we, in our days of open-air treatment for every disease, physical or mental, can criticise unreservedly and favourably.

About three weeks before the expected termination of pregnancy, Hunter wrote to Hawkins that he was of opinion that it was "judicious to take away some blood in the last month of pregnancy when the patient is heated or has symptoms of fullness." The letter is given almost *in extenso* in the diary, and when we consider its whole tenor with reference to the knowledge, customs, and traditions of the day, and view it under these aspects, it must be admitted to be a model of good sense, Scots canniness and judiciousness.

During the last few weeks of pregnancy the Queen, as is so often experienced, seems to have been in very good health and free from the troubles of the earlier months. She "took air every evening," possibly because, on account of the increasing change in her figure, she was shy of appearing in the glare of broad daylight, and the day she spent quietly at her new house in the Park. "Flitting" was in full swing at this time, and to any normally constituted woman—sovereign or subject—the gradual evolution of order from disorder is the most fascinating household amusement ever devised. It could easily be superintended by the Queen, for it must be remembered that the "new house" was a moderate-sized, red brick country villa, not the present unwieldy building, with whose furnishing no one woman could be expected to cope.

At length the tedious days of waiting came to an end, and Hunter, "being called, came to St. James's at ½ after 5 in the morning." He does not record at what hour he was "called," but as "the Queen had been as usual over night and was taken ill at 4 o'clock, after some good sleep," it would probably be very soon after that hour. It was fortunate that the distance between Hunter's house in Jermyn Street and St. James's Palace was comparatively short, for in those days men's personal clothing was much more elaborate than it is now, and it would occupy no short time before one could array oneself in all the glory of eighteenth century attire deemed fitting when paying a visit to a royal lady, even "at ½ after 5 in the morning." When the bagwig, laced ruffles, solitaire round the neck, embroidered cuffs and silk stockings were donned, the sword buckled on and the gold-headed cane grasped, the reputation of Dr. William Hunter would have been seriously imperilled had he been seen hurrying on foot down St. James's Street. Certainly walking was not especially pleasant, as the narrow footpaths, which were separated from the carriage-ways only by a line of unconnected stakes, were subjected to very perfunctory cleansings, but, in any case, formality and ceremoniousness were distinguishing marks of the medical men of this age of artificiality. A cab could not be "rung up," but in a more leisurely fashion a sedan chair or a coach would be requisitioned, so that an hour and a half cannot be considered an extravagantly long time to have been spent in reaching the palace after the call came.

Upon his arrival, Mr. Hawkins informed him of the doings of the morning, and then they waited along with certain officers of state who attend in the neighbourhood of the royal bedchamber ever since the imputation which was thrown upon the birth of the son of James III. With them were the ladies of the bedchamber and the maids of honour. Only in the event of skilled professional services being required was Hunter in attendance, and, as we have seen, he took no part in aiding the birth of the child. How ridiculous and undignified does his position appear to us now. That he was placed, and that he allowed himself to be placed, in such a subordinate station shows with startling clearness how little the real dangers of parturition were then understood. To some extent we cannot avoid blaming the Queen, however, for by the year 1762 the more enlightened women had begun to seek skilled help even in ordinary cases. Germany lagged behind Britain for many years, and the Queen, German to the backbone, prejudiced and ignorant, carried her native thoughts and habits to her adopted country and never forsook them.

It is true that at this time the majority of women were still being attended in childbirth by midwives, but, nevertheless, an active movement had been in progress for several years to improve the teaching of obstetrics to medical students, and to lay its practice upon more scientific foundations. In proof of this statement, we may note that before 1762 four special maternity hospitals had been established in London, the first in 1749. As William Hunter had for fourteen years held the post of physician-accoucheur to Middlesex Hospital, and as from his anatomical, physiological, and clinical studies of the act of parturition, he was as well equipped as anyone of his time to conduct successfully a midwifery case, he must, one thinks, have felt it particularly galling to hang about in an ante-room and later on to listen to Mrs. Draper's report "that all was in a very natural way, but that appearances indicated that it would be slow." Like many another in a similar case who has ventured upon the perilous path of prophecy, Mrs. Draper found herself far astray, for in a little over an hour the child was born. Hunter was evidently not averse from confiding to his diary—and we do not know how many human confidants he had—Mrs. Draper's mistaken prognosis. His words are, "When I little expected it from what Mrs. Draper had told us, the Prince was born." And after the birth of the second child he more than hints his scepticism as to the truth of Mrs. Draper's report to him. Almost certainly most of his thoughts would lie a good deal too deep for words adequate to express his annoyance at following on Mrs. Draper's heels into the Queen's bedchamber after the birth was over. How could he then satisfy himself whether or not perineal rupture had occurred? He could not answer even that one important question, and so it came about that the queen-consort of George III did not receive the attention and careful treatment which are bestowed upon the most poverty-stricken inmate of a modern maternity hospital.

The struggle between men-accoucheurs and midwives was waged most fiercely about the middle of the eighteenth century. Hunter, therefore, was a combatant during the most strenuous stage of the battle. The war, however, had commenced over a hundred years previously. Through untold ages, women in their hours of travail depended upon other women who had gained some experience and possessed some skill in the management of labour, and only in cases where nature and the *sages femmes* failed were surgeons called in, and then usually to attempt delivery by some operation entailing the destruction of the child. It is generally understood that the practice of midwifery as it is carried out nowadays was begun in France about the middle of the seventeenth century, though, of course, in a very elementary fashion as compared with now. Louise de la Vallière, the beloved of *le grand monarque*, Louis XIV, was attended by Jules Clement, who afterwards acted as accoucheur to ladies of the courts in France and Spain. England received the impulse later, but many scurrilous pamphlets were written and many bitter invectives were uttered on both sides before commonsense and science were triumphant. Queen Charlotte was distinctly a reactionary, for in her time many women in the most intelligent circles were being attended by men trained by Smellie, Douglas, Hunter, and others, and by the end of the century the untrained midwife was employed only by the poor, ignorant, and prejudiced. It must, with shame, be admitted that many of the better educated of our own profession were blameworthy, and must be held responsible for the backward position which obstetrics held. The practice of midwifery was regarded with something akin to contempt by the physicians, as is shown by the laws formulated by many licensing bodies, the members of which would not grant their highest honours to those engaged in obstetric practice. It is a curious fact that it was the tragic death in childbirth, in 1817, of a grand-daughter and namesake of Queen Charlotte, which helped to finally waken the profession out of its insultingly apathetic attitude towards obstetrics. In a presidential address to the Fellows of the Glasgow Obstetrical and Gynæcological Society I fully narrated this important case, and dealt with the history of the scientific study of obstetrics in detail more ample than space can be afforded for in these discursive notes.

To return to Hunter and his colleague, whom we have left so long in the ante-room, we find that they were admitted into some small chamber, in which their first duty was to examine the child "all over." He was found "perfect, with every mark of health, and of a large size." As he was as an infant, so he was when he grew in years. Every contemporary writer is agreed that as a young man he was tall and well made, handsome in face and figure, and it was not until after many years of self-indulgence that he become corpulent, bloated, and unwieldy. His constitution must, indeed, have been vigorous to have carried him on for sixty-seven years, in spite of the drunkenness and debauchery which disgraced his life.

The placenta next came in for examination, and was found to be "sound and very compleat." After this, Mrs. Draper kindly vouchsafed the information that "the Queen had had a good time, and was very well," and then the soiled bed-clothes were submitted to inspection. It was not until 9 o'clock had struck, however—nearly two hours after the birth—that "her Majesty was shifted," when, at last, Hunter was admitted into her presence. She had previously taken a little nutmeg and sugar, and she was "without any complaint and with a good pulse." But, nevertheless, custom and etiquette forbade the visit to be paid without a prescription being written by the physician. This was, in fact, Hunter's justification and excuse for seeing the patient, and he therefore gravely ordered—a very simple and harmless carminative. Probably his self-respect and pride, which had suffered from the earlier proceedings, were somewhat restored by the knowledge that he and he only was entitled to prescribe. Vanity often proclaims the gravest seniors to be, in spite of philosophy and years, only children of a larger growth. Though the young mother escaped lightly, the infant suffered at the hands of his medical advisers, who, taking an unfair advantage of his tender moments and helpless condition, compelled him to swallow every two hours, *nolens volens*, a nauseous mixture of almond oil, syrup of roses, and rhubarb powder. A plausible theory might be adduced here that George IV and the other survivors of this truly drastic regimen developed into the six bottle men, now our wonder and despair, in a reaction arising from painful memories of their early physickings.

In about three hours later, Hunter paid a second visit, and the Queen then expressed a wish, which surely seems reasonable, "to live upon broth, caudle and tea, rather than to eat chicken." Who, we wonder, had, within six hours after the birth of her child, suggested to the Queen that chicken was a suitable and desirable form of nourishment? It may naturally be supposed to have been the physician. The question then is, What was the reason of his pertinacious advocacy of the claims of chicken? It was opposed to the wishes of the Queen, as we know from the monotonous reiteration of the plaint that "the Queen would not eat chicken." Heresy it would be, of course, to hint at collusion with a poulterer. This mystery must, therefore, remain as unsolved and insoluble as that of the identity of the man in the iron mask. Queen Charlotte showed in this respect more evidence of the knowledge of the fitness of things than did her physician, but at length she became as wearied as the unjust judge, and on the eighth day of her accouchement she yielded. She then made it quite apparent that the abstention had not been due to conscientious scruples against the destruction of animal life, or from sympathy with the principles of vegetarianism. Nor did she play with her food in a fine-ladylike fashion. She redeemed the lost time, as we learn from Hunter's artless remark—"the Q. ate with appetite almost a whole chicken."

Undoubtedly this diary substantiates what is otherwise well known, that Queen Charlotte must have possessed a primevally vigorous constitution, unemotional, and not worried with "nerves." On the fifth day she was on the couch, and stayed up for "dinner and Tea for refreshment" on the ninth day. These dates stagger us who know the ordinary post-partum habits nowadays of women in the wealthier classes, but in the Queen's case—by good luck rather than by good guidance, it appears to me—it is apparent that no gross evil effects were produced, as she bore fifteen children and survived until she reached the age of 74.

The diary from day to day chiefly records the action of the excretory organs, the character of the lochia, the amount of sleep, the food taken or refused, and the condition of the infant. We could have well spared some of these details for even the briefest record of what then seemed trivial domestic occurrences, but Hunter was not, like some other diarists, writing with an eye to the future and in the fond hope of enlightening or delighting posterity. Almost the only remark which relieves the monotony of the professional records is that on the fourth day, when we are unexpectedly and without comment told that "the Queen laughed heartily." It does one good to read these four words, so charmingly irrelevant. The ordinary conception of the Queen, petrified into the severe puritanical woman of later years, vanishes, and its place is taken by that of a young girl—unrestrainedly enjoying the pleasure of laughing as heartily as any of her subjects. A touch like this lightens up the diary like a ray of sunshine in a dusty room, and in our minds we ever afterwards have a brighter and kindlier vision of Queen Charlotte. But why did Hunter tantalise us by omitting to tell us the fountain and origin of the laughter? Did a joke not to be committed to paper fall from the lips of the eminent physician-accoucheur in a moment when professional dignity was unbent? He is revealed in the Reynolds' portrait as the undoubted possessor of a sense of humour, and we have the more direct testimony of Wardrop, the biographer of Matthew Baillie, that William Hunter had a talent for relating anecdotes with such facial and vocal expression that if he had adopted the stage as a profession he would have risen to high rank as a comedian. And, in the midst of all his exacting medical work and anatomical research, he ever found or made time to cultivate friendships, evidently believing with his contemporary, Samuel Johnson, that "a man should keep his friendships in constant repair." He was one of the band of notable Scotsmen which included the brothers Adam, John Home, Erskine, Wedderburn, and Robertson, who met at the celebrated British Coffee House. Here he often spent happy hours in convivial intercourse, and it is related that one of his favourite toasts was, "May no English nobleman venture out of the world without a Scottish physician, as I am sure there are none who venture in." Knowing and remembering, then, this side of his nature, which made him so much more lovable than his brother, we can readily conjure up the scene in the bedchamber where the courtly gentleman tells the good story, or repeats the piece of spicy gossip, and thus causes the Queen to "laugh heartily." The Queen, of course, may have laughed at a joke or story of her own telling, when we may be sure that she was rewarded by the sympathetic smiles of her attendants. Courtiers are always able and willing to reward the efforts of royalty. But "howsoe'er these things be" we know not; one fact only is certain—"the Queen laughed heartily," and for that good deed we return many thanks.

Until I had read this diary, I was ignorant that the etiquette of the British court forbade our queens to suckle children born to them. The reason I do not know. It may have been considered desirable that the royal duties be undertaken without further interruption and as quickly as possible, or it may have been deemed necessary to have as many heirs to the throne supplied without the delay so frequently caused by lactation. Whatever the reason, Queen Charlotte followed her predecessors' example, and apparently suffered no great inconvenience, although it is not mentioned that any drugs were administered locally or generally.

A very unexpected piece of news is that the Prince "was washed all along with cold water." The birth certainly occurred in August, but still it is surprising that such a Spartan-like treatment was adopted in the days of tightly shut windows and curtained beds and cradles. One possible explanation, rather far fetched, I must admit, is that, hot water not being "laid on" then, even in a palace, the nurse used the water *au naturel* simply to avoid the trouble of heating it.

In exactly a year later, almost to a day, the second child was born, this time in Buckingham House. The delivery was very rapid, and it is interesting to read in the diary Mrs. Draper's report. Comment upon it is unnecessary, although it is amusing to note that Dr. Hunter evidently distrusted, disbelieved, or affected to disbelieve, Mrs. Draper's narrative. He expressly underlines the word "said" after he has recorded her narrative: "This she *said*," giving us the impression that he credited Mrs. Draper with the deep design of annexing to herself all the honour and glory of attendance upon the royal patient. As we have already seen, the feud between the accoucheurs and the midwives was at this date at its bitterest, and probably Hunter had good reason to be suspicious of the *bona fides* of the report as to the precipitancy of the labour. There may have lurked in Mrs. Draper's bosom the desire to show the world how unnecessary was the presence of a physician even if he were merely marking time in an adjoining room.

Drugs were prescribed for mother and child similar to those given after the first birth, and the after-progress of the case was uneventful. The Queen was out of bed on the fifth day, and she displayed the same marvellous power of recuperation as in the previous year. She "continued to recover daily, and regulated herself in all things by what she had done in her first lying-in, which she said she chose to do because she had succeeded so well." A thorough conservative, disliking and distrusting innovations, she was all through her life, in great as in small affairs.

The royal lady did not deem it necessary to consult Dr. Hunter when "she had or was supposed to have a miscarriage at Richmond." This information he obtained from Mr. Hawkins, and even then it was almost certainly secondhand news. Either the redoubtable Mrs. Draper attended, or possibly the Queen filled in her own person the triple *rôle* of nurse, accoucheur, and patient. No real conception of the possibility of danger to life or health in such a proceeding then existed, and even to this day a belief that an early miscarriage is a merely negligible incident of trivial import has not been entirely eradicated.

Again a month of August came, and on that of 1765 there was born on the twenty-first day a third boy, whose entrance into the world caused his mother the minimum of suffering. On the previous day she had made a little excursion to Richmond Lodge, probably on account of the heat of the weather. Dinner in these days was in the afternoon about 4 o'clock, and after it was finished she returned to London by the pleasant riverside road known to those who, after dinner in the "Star and Garter," have been driven back in the cool of a summer evening. When the Queen retired for the night she naturally felt somewhat tired, and at one o'clock in the morning "found that it would be her Labour." In a little longer than an hour all was over, and another future King had made his *début* upon the world's stage. Again the recovery was perfect, and nothing disturbed its progress except the very hot weather, which had also been a cause of annoyance two years previously. Not infrequently one meets old people who mournfully assert that "the seasons are changing," but, so far as August in London is concerned, it is still the same stifling, suffocating month that it was in the "good old days" of Queen Charlotte.

The last sentence of the diary, "The Nurse still kept her own child," reveals the fact that William the Fourth had a foster-brother or sister, whose career after these infant days would be as far apart from his as "east is distant from the west." But what a foolish convention, whatever the originating cause, to call upon strange women to nourish these royal infants, while the maternal milk was overflowing in abundance. "That tyrant custom" and the decrees of fashion too often fetter and restrain our saner judgments, and royal personages, unhappily for themselves, are more tightly bound in their shackles than almost any other members of the human family.

CHAPTER V.

THE DRUGS AND FOODS: MISCELLANEA.

WE have read that the Queen, in the early months of her first pregnancy, suffered from a cough. Her medical advisers we know to have been as ignorant of its cause then as we are to-day, but they treated her, *secundum artem*, with "wormwood draughts with spt. all. and occasionally a little Tinct. Rhubarb . . . at night so as to keep the body open."

Wormwood is the well-known absinthe, the flowering herb of *Artemisia absinthum*, an indigenous plant growing wild on dry waste places and in mountainous districts. It yields a bitter principle, which, combined with other bitters, is now widely used in France, with, unfortunately, tragically injurious effects upon the nervous systems of its devotees. It is not now employed medicinally, but in 1762 was esteemed as "a moderately warm stomachic and corroborant." Along with it was prescribed "spt. all.," which I take to be the spirits of alliaria, a member of the garlic family, and whose popular name in England was sauce-alone or jack-by-the-hedge. Its leaves have a flavour like onions, and the spirit distilled with them produced diaphoresis and diuresis, the perspiration being impregnated with the characteristic odour. Poor young Queen, condemned to drink nauseous draughts of wormwood and garlic, she was surely paying a high price for the glory of wearing a crown. We may be sure that not seldom did she wish herself safely at home in the little palace of Mecklenburg-Strelitz, in happy ignorance of Britain and its King. For the wormwood draughts, and the rhubarb, "to keep the body open," must have been less unpalatable than the dull and uninteresting man, who hardly permitted her to think without his consent. Mrs. Harcourt in her diary tells us that at this time "except the Ladies of the Bedchamber for ½ an hour in a week in a funeral circle or a ceremonious drawing R^{m} she never had a soul to speak to but the King."

From time to time a liniment was employed for the relief of a pain in "the left side about the short ribs." This was "Lin. Vol. & Sapon.," the component parts of which were carbonate of ammonia, olive oil, and soap. The ammonia salt in Hunter's time was frequently prepared from the horns and bones of certain species of deer; hence the old name hartshorn, which is not yet disused.

The sufferings of the patient at the hands of her physician were further increased by the additional prescription of "sperm cete"—spermaceti. This is the semi-concrete matter contained in the upper jaw of the sperm whale, which, for medicinal purposes, was purified by being boiled with an alkaline lye, and was afterwards broken into flakes. "It is given with advantage in tickling coughs and in such cases in general as require the solids to be softened and relaxed, or acrimonious humours to be obtunded."

"Sal Volat," given by Mr. Hawkins when "her Majesty was seized with giddiness and was faint," is, of course, the well-known sal volatile, or spiritus ammoniæ aromaticus, used to-day in the same manner and for the same reasons.

The composition of the "Root drops" is not given, but that of a julep is detailed. The rose and peppermint waters "raised the strength and spirits, allayed pain, were of great importance in flatulent colics, hysteria, depressions, and other like complaints." How are the mighty fallen! Aromatic volatile spirit is sal volatile under another name, and "syr. caryophyll" was officinal in both the London and Edinburgh pharmacopœias as syrupus caryophylli rubri. It was prepared from the fresh flowers of the English clover, the clove July-flower or gilliflower, and was employed simply as a pleasant aromatic vehicle.

As regards taste and flavour, therefore, the julep was faultless, and we may be sure that Hunter was certainly scientific enough to regard it as a mere placebo.

Immediately after the birth of the first child the Queen was given a little nutmeg and sugar, probably in hot water, but on the admission of Hunter and his colleague the following more elaborate prescription was written—

R.—Sp. Cit. Sol. ℈i.
Pulv. Contr. Co. ℈ss.
Aq. Alex. Simp. ℥iss.
— N. M. ʒi.
Syr. Ros. ʒss. M. Ft haust.
Sig.—6ta quaque h. sum.

With regard to the first ingredient, I can discover nothing in any pharmaceutical books of the period, and neither Professor Stockman nor Mr. Rutherford Hill of the Pharmaceutical Society of Great Britain, has been able to throw any light upon its composition. The second, however, is the compound powder of contrayerva—5 oz. of contrayerva root to 1½ lb. of powdered shells—no longer used medicinally. "The contrayerva was first brought into Europe by Sir Francis Drake. It is the root of a small plant found in Peru and other parts of the Spanish West Indies. . . . It is diaphoretic and antiseptic. . . . The compound powder was formerly made up in balls, and called lapis contrayerræ, employed in the decline of ardent fevers, and through the whole course of low and nervous ones" (Hooper, 1811). "Aq. Alex. Simp." refers to the distillate of the seeds of *Hipposelinum* or *Alexandrina Herba,* which grows wild about the sea coasts and the sides of rivers, the seeds being bitterish and aromatic. The aqua was employed as a carminative, stomachic, and aperient, but neither it nor the succeeding ingredient of the prescription is now employed medicinally. "Aq. N. M." is the *Aqua nucis moschatæ* (nutmeg), the kernel of the fruit of *Myristica fragrans,* which, officinal in the Edinburgh Pharmacopœia, was there described as an agreeable cordial water. The prescription was rounded off by the addition of syrupus croci, prepared from the crocus or saffron. If we can believe the statements of the older therapeutists, this was "a very elegant and useful aromatic, of a strong, penetrating, diffusive smell, and a warm, pungent, bitterish taste, serviceable in female obstructions and hysteric depressions."

The newborn infants were promptly dosed with sweet almond oil, syrup of roses, and rhubarb, a teaspoonful of the mess being forced upon them every hour, this representing three-eighths of a grain of rhubarb in each dose. The evident design was to cause evacuation of thé meconium more rapidly than nature intended.

When the Queen complained next day that the draught caused thirst her physician proved himself a man of resource, and promptly satisfied his patient by writing another prescription. Aq. ros. was substituted for aq. alex. simp., and syr. ros. for syr. croci. *Voila tout!* but great is the power of faith.

Mrs. Draper administered a cup of "Aq. Puleg. and Hysteric" to the Queen, evidently "off her own bat." The taste and the smell of such a draught must have been most unpleasant, and, luckily for parturient women, the ingredients are not used nowadays. Pulegium is the common pennyroyal, only found now in abortifacient pills. It was considered a carminative and emmenagogue, and was extensively administered in functional nervous disorders. The "Hysteric" or hystric must have been the bezoar hystricis or lapis porcinus. We find, later, that Hunter also prescribes "Pulv. Bezoard" for the young Prince who was a "little griped." Bezoar was a term originally applied to a concretion or calculus found in the stomach of the goat species, and was imported chiefly from Persia. Gradually it came to mean almost any concretion, even one artificially manufactured. The bezoar microcosmicum was the calculus from the human bladder; that given by Mrs. Draper was the bezoar hystricis, the gall-stone supposed to be found in the bladder of the Indian porcupine. It was intensely bitter and, when steeped in water, was understood to cause an aperient action, which in Queen Charlotte's case Hunter concluded "had been salutary in carrying off the milk." Bezoars in general were regarded as possessing the power of expelling ill "humours" from the system. In Bradley's *Family Dictionary* (1727), we find it stated that "All medicines contrary to Poisons are called Bezoardicks." The formula for Pulv. Bezoard, according to Brooke's *General Dispensatory* (London, 1765), was "Compound Powder of Crabs' Claws, one pound, and Prepared Oriental Bezoar, one ounce." The composition of the first of these was "Prepared Tips of Crabs' Claws, one pound; Prepared Pearls, three ounces; Prepared Red Coral, three ounces." A mixture much similar to that given for the Pulvis Bezoardicus was sold under the name of Gascoigne's powder and Gascoigne's ball, and was a popular remedy for children's complaints. The prescription of pulv. bezoard by Hunter is surprising, and although it may have been a concession to prevailing prejudice, more probably it indicates a survival of mediæval superstition in his own mind. Corals, pearls, and gold had long been employed medicinally. A letter written in the days of Elizabeth by Sir Charles Cavendish reveals the nature of the prescriptions then in favour even with the most highly educated. He regrets that he could not send some of his favourite nostrum, salt of gold, to old Lady Shrewsbury, and notes that "the pearls, ten grains, are to be taken fourteen days together; as to the coral, Sir Walter Raleigh saith he hath little left."

Some of the foods and preparations of foods mentioned in the diary are still taken. It is not stated how the famous chicken was prepared, but presumably the methods of cooking chickens have not been appreciably modified in 140 years. We are not told in what manner some of the broths and gruels were cooked, although on one occasion it is mentioned that Her Majesty "had eaten chicken broth with barley heartily." Nowadays, a chicken soup is usually prepared with rice, and a chicken broth with barley is unknown. Tea in 1762 was not in universal use, its cost putting it out of the reach of all except the comparatively wealthy. The Queen indulged in the refreshing beverage, and doubtless drank it out of the tiny cups without handles into which it was then poured. Old-fashioned and ultra-patriotic people inveighed against its use as a foreign drink not to be compared with good old English ale, and in medical circles it was unfavourably regarded. "In weak constitutions if much used it causes tremblings and shakings of the head and hands, loss of appetite, vapours, and other nervous diseases," according to Alston in his *Lectures on Materia Medica* (1770). A vigorous defence was offered by the redoubtable Samuel Johnson, who, in 1757, declared that he was "a hardened and shameless Tea-drinker, who has for twenty years diluted his meals with only the infusion of this fascinating plant, whose kettle has scarcely time to cool, who with Tea amuses the evening, with Tea solaces the midnight, and with Tea welcomes the morning." With the aid of its friends, and despite medical and patriotic opposition, it made its way, and, as we have seen, Queen Charlotte drank it in 1762, without recorded remonstrance or comment from Hunter.

"She was ordered a spoonfull of wine in each pint of Caudle." The word caudle, now obsolete, was formerly well known, so well, indeed, that by Douglas Jerrold it was seized upon as a most appropriate name for the scolding heroine of the curtain lectures. It is derived from *calidus*, "warm," appearing in French as *chaudeau*. It, therefore, simply meant originally a warm drink, and latterly it was a mixture of a thin gruel of bread and eggs, to which was added wine or ale sweetened and spiced. While given to any sick person, it was most especially administered to parturient women, and it was *de rigueur* for all visitors to taste it. Before the Prince of Wales was a fortnight old, public notice was given that all who desired it might visit St. James's Palace "on drawing room days between 1 and 3 o'clock." The crowds of ladies flocking to see the child and taste his caudle and cake soon became enormous, the daily expense for cake alone being estimated at £40.

There are numerous allusions to the drink in eighteenth century literature, as, for example, in *Tom Jones*, "In all this misery, his wife has as good caudle as if she lay-in in the midst of the greatest affluence; I tasted it, and I scarce ever tasted better." In much later days (1855) Thackeray wrote in *The Newcomes*, "She went to see the grocer's wife on an interesting occasion, and won the heart of the family by tasting their caudle."

"The Queen had taken plenty of Berry." This consisted of bread steeped in hot water or heated milk, which was then seasoned or sweetened. The word is still in daily use, and its derivation is interesting. I daresay it has often puzzled those who hear it to understand the connection between berries and bread. The word really is a corruption due to erroneous etymology. The Old English, "bréw," a "pottage," or "brewis," became changed to "bre" or "brey," and this again varied phonetically with "bery," or, incorrectly, "berry." Bread-berry has, therefore, nothing to do with berries, and ought to be spelt with a single "r"—bread-bery, or, still more correctly, bread-brey. The derivation and ordinary meaning both agree. It is simply a bread pottage.

The word "Pap" used by Hunter has the same significance as "berry," and originated in the early utterances of infants. It is known independently in various languages, baby talk being the same in all countries.

It is deeply interesting to note that when Hunter tells us the Queen took nutmeg and sugar, he splits the former word into two and the "e" becomes "u"—"nut mug." This form is not unknown yet in Scotland, and, as is so often the case, the Scots is really the correct as well as the old English manner of spelling and pronunciation. It is a word of hybrid origin, the first half being English and the latter half derived from the old French, *muge*, "musk," a derivative of the Latin, *muscus*. In mediæval Latin, nutmeg was *nux muscata*, literally a scented or "musked" nut. Chaucer in the *Canterbury Tales* spells the word as notemuge, and in Mandeville's *Travels* we read, "Wytethe wel that the Notemuge berethe the Maces." When or why the corruption began I do not precisely know, but in Shakspeare's day nutmeg was the form used in England. In *Henry VIII*, Orlando says, "He's of the colour of the nutmeg." But in 1762 William Hunter writes of nut mug, and proclaims himself at once either a Scot or a North of England man.

"A pain round the Hypochondria." Such an expression would not be found in a modern medical report. The word hypochondria is the plural of hypochondrium, and refers either to the parts lying under the ribs on each side of the epigastric region, or to the viscera situated in the hypochondria. Smellie, in his *Midwifery*, says, "There was no hardness or inflammation about the hypochondria."

"On Sunday morning [the Queen] had a little hurry from a kind of palpitation," and "avoid . . . any thing that could in the least tire or hurry her." In the former of these sentences the word hurry figures as a noun, as referring to mental agitation, excitement, or perturbation, and in the latter as the corresponding verb. Although in this sense now quite obsolete, it was at one time universally employed. For example, Richardson, in his *Sir Charles Grandison,* says, "They thought it advisable that I should not be admitted into her presence till the hurries she was in had subsided," and in Fanny Burney's *Diary* we have, "He found nothing now remaining of the disorder, but too much hurry of spirits." Addison, in sonorous periods, warns us that "ambition raises a tumult in the soul, it inflames the mind, and puts it into a violent hurry of thought." Dickens frequently employed the word in its older sense. As an example, we may take a sentence from that marvellous chapter of *David Copperfield*, in which the storm is described, "Yet in all the hurry of my thoughts, wild running with the thundering sea, the storm and my uneasiness regarding Ham were always in the foreground." In modern paraphrase of the sentences in Hunter's diary, therefore, we should say that the Queen had suffered from nervousness as the result of palpitation, and that it was advised that everything ought to be avoided which would at all tire her physically or agitate her mentally.

Although the interest of the diary is not yet exhausted, consideration of the value of time and space warn me that these desultory and imperfect notes must be drawn to a conclusion. An old diary, like an old letter, is so redolent of memories, that in any sympathetic mind it strikes the imagination, inspires sentiment, and stimulates interest. Even if through its pages there runs a vein of pathos in that it emphasises anew the old tale of the brevity of human life and the futility and folly of the actors in the passing pageant in striving too eagerly for honours and wealth, it yet excites our interest by reproducing in our minds vanished scenes, by rehabilitating those who once strutted their little hour upon the stage, by the re-enactment of old-time customs, and by the capture of the flavour of departed words, phrases, and habits of expression. Even through William Hunter's prosaic diary we can look down the dim vista of the forgotten years, and the past again becomes alive and stirring, and King, Queen, physicians, and lesser characters enact their predestined parts as players in

> "the moving row
> Of Magic Shadow-shapes that come and go,
> Round with the Sun-illumined Lantern held
> In Midnight by the Master of the Show."

THE VACCINE TREATMENT OF INFECTIOUS DISEASES —(*a*) CHRONIC ACNE VULGARIS; (*b*) INFECTION OF THE URINARY TRACT; (*c*) TUBERCULOSIS (WITH OPSONIC CHARTS IN THE VACCINE TREATMENT OF TUBERCULOUS DISEASE).[1]

By JAMES MILLER, M.D.

As the outcome of the study of immunity and recovery from infections produced by pathogenic microbes we have one of the most remarkable advances in modern medicine, and as a result we now possess for diseases of this class a number of remedies, the skilful use of which demands special knowledge.[2] Before I cite cases, allow me to state as briefly as possible in a general way the data upon which the application of these remedies as curative agents is based. It has been shown beyond doubt that many diseases are directly or indirectly caused by the entry into the body of living pathogenic microbes. Each of these infections is caused by a definite virus—the given infection is caused only by that virus, and the virus always produces the same infection and no other. In a word, we state that the infectious agents are specific. The establishment of the doctrine of specificity has been of fundamental importance, for its practical outcome has been the elaboration of a specific therapy, remedies being sought which lead to the exclusive destruction of the specific microbe which has been proved to be the cause of the given infection.

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[1] Read at a meeting of the Medico-Chirurgical Society of Glasgow held on 2nd October, 1908.

[2] I may mention that a very instructive article on bacterio-therapeutics written by Bulloch is to be found in Hutchison and Collier's *Index of Treatment*.

When a pathogenic microbe enters the body, the complicated phenomena which ensue have been conventionally likened to a conflict. The weapons of the invading microbes are the toxins which these bacteria elaborate. To these toxins the clinical phenomena of infectious diseases are due. The mechanism of defence consists in the production of protective substances, which, entering the blood-stream, are carried throughout the body. Where these protective substances are actually formed is not known with certainty, but they can be demonstrated in the blood, and the fact that bacteria do not continuously multiply in the body is referable to these substances.

The immunity of which I have to speak to-night is that artificially induced by inoculation with the infectious agency, which has been rendered sterile by the aid of heat, chemicals, or other means. In cases of chronic acne vulgaris a culture upon an agar slope is obtained from the contents of a pustule. A growth of twenty-four to thirty-six hours is usually sufficient. This growth is carefully scraped off and an emulsion of the organisms made. The emulsion is sterilised by keeping at a temperature of 58° C. to 60° C. half an hour. The standardisation of the vaccine is most conveniently performed as follows:—Equal volumes of blood and emulsion of cocci are uniformly mixed, and upon a slide a film of this mixture is prepared and stained in the usual way in making and staining an ordinary blood film. The organisms and red blood corpuscles are counted in a series of microscope fields. For convenience, say that the number of cocci is exactly equal to the number of red cells, *i.e.*, 5 millions in the cubic millimetre, which is equivalent to 5,000 millions in the cubic centimetre. Experience has shown that 500 millions of cocci is a sufficient dose for purposes of cure, therefore we dilute our emulsion to one part in ten, and now find it of the strength that 1 cubic centimetre constitutes a dose. It is sometimes convenient to have a staphylococcus vaccine containing 1,000 millions of cocci in the dose of 1 c.c. In that case our emulsion need only be diluted one in five. To prevent contamination, and to preserve the vaccine perfectly sterile, it is put up in single doses in hermetically sealed glass capsules. It is always advisable in starting the treatment to begin with half a dose, and to note the effect upon the patient's opsonic index to the microbe inoculated. The inoculation may be given subcutaneously in the flanks or interscapular region; preferably I inoculate intramuscularly in the supraspinous fossa of the scapula when the dose is not larger in bulk than 1 c.c. Inoculation under the skin of the extremities is to be avoided. Without running much risk an inoculation may be given every ten or fourteen days; but there are cases which cannot be successfully treated on this basis, and, undoubtedly, to know exactly what you are doing and the progress being made, the opsonic content of the blood should be estimated from time to time.

The first case which I will cite to you illustrates (in this the simplest of all forms of inoculation treatment) how the patient's condition might have been rendered worse and discredit brought upon the mode of treatment without the information afforded by opsonic estimations.

Vaccine treatment of chronic acne vulgaris controlled by observations of the opsonic index.

CASE I.—A lady suffering from chronic acne of the face of more than twenty years' duration. Many local applications had been tried, but unsuccessfully. The only local treatment which seemed to have the slightest good effect was scarification and depletion of the pustules and inflamed spots. This was done three or four times a week for long periods, but new crops of spots kept appearing as old ones died down. A pure culture of the staphylococcus pyogenes albus was obtained from the pustules. The patient's opsonic index to this organism was found to be 0·9. A vaccine was prepared from the culture containing 500 millions of cocci in each c.c. Half a cubic centimetre (0·5 c.c.) of the vaccine was injected intramuscularly, with the result that during the next fortnight the opsonic index was lower than before inoculation. Therefore, the small dose of half a cubic centimetre (0·5 c.c.) was again administered, instead of proceeding to give a full dose, as would have been done if the routine treatment had been followed. For a period of five weeks following the last injection the staphylococcal opsonic index was frequently observed, and the highest point registered was 0·85. After further two small doses the opsonic index was found to have returned to 0·9, the point at which it stood before inoculations were begun. I desire to emphasise the facts of the prolonged depression of the opsonic content of this patient's blood as shown by the low opsonic index, and the failure to get improvement in the diseased condition during that time. This point was reached three months after the vaccine treatment was started, and during the whole of that time the local treatment was not relaxed. During the next ten days the index rose to 1·1, a certain amount of improvement locally was observable, and a full dose (1 c.c.) of vaccine was administered. Still the rise in the opsonic index was slow—the improvement in the local condition equally slow. It was now possible to keep to the full doses of vaccine at about three-weekly intervals. The patient, formerly very depressed in spirits, began to show considerable improvement in this respect. The dose of vaccine was now increased to 1,000 millions of cocci, and six months after the beginning of special treatment an opsonic index of 1·5 was obtained. The condition of the patient was now most markedly improved, and one month later the whole of the skin of the face was entirely clear. Occasional opsonic observations were continued for some time, and the index was found at one time to have fallen to 0·9, with return of a few angry-looking spots on nose and cheeks, but a dose of vaccine brought about a rapid recovery and a rise in the opsonic index to 1·6; since when the highest index recorded was 1·8 and the lowest 1·2. In all, fourteen inoculations were given, four of which preceded even the slightest improvement. After the lapse of a year there was a slight return of the mischief, which was wholly dispelled by a single dose of vaccine, and the patient is keeping perfectly well.

Case II (Miss S. H.) had suffered from a severe form of acne of the face for a long time. When vaccine treatment was adopted the condition was more like eczema than acne. On washing the face it bled freely, followed by exudation of serous fluid. Four inoculations were sufficient to clear up the whole condition, local treatment being at the same time carried on. It is of importance to mention that even before inoculations were begun the staphylococcal opsonic index was as high as 1·3, so that in all probability this patient was on the way to a spontaneous cure—the progress merely being hastened by inoculations. Further, by observing that the patient's opsonic index was high—in other words, that she was making a good response to auto-inoculation—I was able to start with a large dose at once, and thus to shorten the duration of treatment.

Case III, I merely mention for its peculiarity. There was intense itching of the skin of the face, neck, and chest on exposure to sunlight. This susceptiblility had existed since childhood. The patient had at one time suffered from gastric ulcer, and it was thought that the condition of the skin was being kept up by some gastric disturbance, but all treatment based upon this was absolutely ineffective so far as the skin was concerned. The patient was a young lady, who undoubtedly bestowed great attention upon her personal appearance, yet so intolerable was the itching that the face and neck especially were frequently bleeding from scratching with the finger nails to gain some relief. In the remote hope of doing some good I inoculated with a mixed staphylococcus vaccine. A certain amount of improvement was got, and again a standstill. Five inoculations in all were given, and the patient was sent on holiday, which she spent on the Continent, undergoing no special treatment. Six weeks later she returned to report that she was perfectly well. I draw no conclusions from this case, except that I think the inoculations had some beneficial effect upon the condition.

CASE IV is that of a lady who had long been treated for eczema of the face and neck by painting with silver nitrate, plasters, wearing a veil, dieting, &c., but all to very little permanent good. The chief complaint was that she could not go out in ordinary bright sunlight, or when it was breezy, without afterwards, within six hours of the exposure, suffering from very marked swelling of the face and neck, rendering her features unrecognisable. When I saw her, in addition to marked swelling of the subcutaneous tissue of the face there was a considerable amount of serous exudation, which was crusting, but no pus. From this exudation I obtained a pure culture of staphylococcus aureus, from which I prepared a vaccine. The opsonic index to this organism before inoculation was 1·1, so that I began with a dose of 500 millions at once. This dose was repeated on two subsequent occasions at fortnightly intervals, and then a dose of 1,000 millions of cocci was given. The improvement in the diseased condition was rapid, the patient could now do without a veil or any other protection for the face, and the skin now assumed a normal healthy appearance. In all, seven inoculations were given, and the opsonic index rose as high as 1·7.

CASE V I look upon as one of the most interesting I have treated. The man imbibed alcohol freely. He is an analytical chemist, and prepared his particular tipple by the litre measure from absolute ethylic alcohol, which he diluted to the strength of proof spirit. The quantity of this dilution consumed per diem was about 2 litres. The man, about 37 years of age, had been affected with acne since boyhood. The trunk, limbs, face, and neck were affected. The skin of the chest and back was scarred and pitted with cicatrices of cysts, which had suppurated and healed. Innumerable pustules and sebaceous cysts were present on the chest, back, neck, and face. On making a culture from the pus, only the staphylococcus pyogenes albus was obtained. The opsonic index to this organism was 0·7. A vaccine was prepared from this culture, and by inoculations the opsonic index was raised to 1·2, but after a return to the alcoholic habit it fell back to 0·8. Having got the promise of the patient that he would avoid alcohol, I continued the treatment with a mixed vaccine, and seven inoculations were given before any very marked improvement was got. During this time the opsonic index kept about 1·0 and 1·1. After the seventh inoculation there was a rise to 1·6; only then did marked improvement take place. In all, the patient has received eleven inoculations, and he states that his skin is better now than it has been for twenty years. His face has shown the greatest improvement, and I feel confident of a greater measure of success if the alcoholic habit is kept entirely in abeyance.

At this point I wish to make a few general remarks upon the treatment of chronic acne vulgaris. When we have a patient suffering from a severe form of this disease, whose resistance to the staphylococcus aureus or albus, as measured by his opsonic index, is found to be below normal, it is evident that the constitutional condition as well as the local condition is at fault, and local applications alone are very unlikely to effect a permanent cure. It is absolutely necessary to raise the resistance of the tissue fluids of the body to the infecting organisms, and to my mind the surest way of doing so is by the appropriate vaccine treatment. I do not mean that local measures should be neglected, but that local treatment alone is not curative. In the few cases to which I have referred (as well as many others) local treatment had been vigorously carried on for years, any gastric derangement had been well attended to, and some of the patients had been special dieted for months at a time, but without any permanent, in fact often without transient, improvement. The vaccine treatment, as I have found, may sometimes result in exacerbations of the disease, which are decidedly discouraging, as witness Case I, but these backsets can be largely avoided by having the dosage, as regards quantity and time, regulated by opsonic observations. It has been stated that four or five inoculations are usually sufficient to effect a cure in chronic acne vulgaris, but the first case I have reported to you had fourteen inoculations, and the last one has already had eleven. Both cases, however, were exceedingly chronic and severe. One other point of some practical importance in the treatment is this—at the seat of inoculation, especially when the dose is large, a certain amount of local reaction with swelling may be got, but having the assurance that your vaccine is sterile this need not give rise to anxiety. In fact, I have found where the local reaction has been marked, the constitutional reaction has also been considerable, resulting in an abundant elaboration of protective substances, as shown by the usual opsonic estimations.

Infection of the urinary tract.

For permission to place notes of this case before you I am indebted to Sir George Beatson, and to his resident surgeon, Dr. Roy Young, for the clinical history. The man, a commercial traveller, was admitted to Ward XX of the Western Infirmary on 9th October, 1907, complaining of pain in the back and being generally out of sorts. For three weeks previous to admission he had what he described as rheumatic pains in the fleshy parts of both legs, but not in the joints. He had had five severe rigors, and also during this time there was pus in the urine. On admission the patient looked ill (furred tongue, high temperature, &c.), but complained of no localising pain except in the small of the back. There was no tenderness over the kidneys, and neither of these organs was palpable; no cardiac murmur. The urine was acid, and contained a large quantity of pus. Bacteriological examination yielded the surprising result of a pure culture of Friedländer's pneumo-bacillus. The temperature for the first four days was high and irregular, but there were no rigors. From 13th to 15th October the temperature gradually fell, and the patient appeared much improved. Up to this time he had been passing 40 to 50 oz. of urine containing pus in the twenty-four hours. On 16th October a rigor occurred, and on the 17th a rigor, and 26 oz. of urine were passed

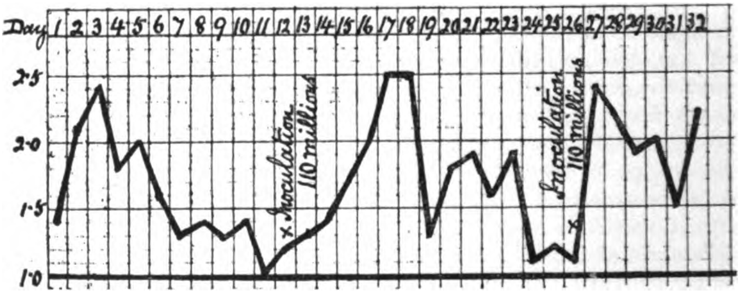

CHART NO. 1.

containing no pus; on the 18th a rigor, 24 oz. of urine, and no pus. During these rigors the temperature had risen to 106° F. On the 19th the temperature was normal, and 40 oz. of urine were passed containing a large quantity of pus. From this date the patient's opsonic index to Friedländer's pneumo-bacillus was estimated daily, and the result is set forth in this chart (No. 1).

It will be seen that the immunising mechanism had already got to work, that the patient was already acquiring immunity to the pneumo-bacillus. A few days' high tide of protective substances is followed by a slow ebb, but a dose of vaccine prepared in readiness for this fall was administered; 110 millions of pneumo-bacilli were inoculated at this stage, with the resulting high tide. About this time a culture was again obtained from the urine, showing that live pneumo-bacilli were still present. The patient was, however, steadily getting well—no rigors and no complaints of pain. He was now out of bed and moving about. Another dose of vaccine was given, and shortly afterwards the patient left the infirmary, with the strict injunction to return at once and report himself if anything untoward occurred. Some months later he did report himself, but only to state that he was keeping perfectly well. Examination of the urine showed it to be normal.

Tuberculosis.

On the subject of the vaccine treatment of tuberculous diseases it is not possible to talk with the same completeness. The treatment is very much slower than in cases of the infections already mentioned. I trust you will extend to me your forbearance if, in going into details, I tread upon ground with which you are familiar. In establishing the dose of tubercle bacillus substance by opsonic methods the vaccine which has been used is Koch's new tuberculin (T.R.). It is prepared from a virulent culture of human tubercle bacilli. The dried bacilli are broken up in a metal cylinder loosely filled with steel balls. The cylinder is revolved for a long time, so that attrition of the bacilli to a fine state of subdivision takes place. The broken up bacilli are emulsified with distilled water and centrifugalised. The supernatant fluid containing exotoxins is rejected. The residue is dried, put into the metal cylinder and again subjected to a long process of trituration, emulsified, and centrifugalised. The resulting fluid from this second grinding process, preserved by the addition of 20 per cent glycerine, constitutes new tuberculin. It is a suspension of bacillary substance in a state of minute subdivision; the adherent extra-cellular toxins characteristic of the old tuberculin are removed by the first washing. From 1897 onwards the manufacturers of new tuberculin stated that 10 milligrams of solid bacterial substance were contained in each c.c. It would be more correct to say that 1 c.c. is the resultant of the treatment of 10 milligrams of tubercle bacilli, its actual content of dry tubercle substance being only 2 milligrams. The doses, however, have been arrived at by observation of their effect, and only incidentally described on the stated weight, so that the original error may be neglected. Minute as the doses of new tuberculin have hitherto been stated to be, they are only one-fifth of the strength which we thought we were administering. a most interesting reflection on the powerful nature of the substance. For convenience I will keep to the figures—1 c.c. contains the resultant of the treatment of 10 milligrams of tubercle bacilli—bearing in mind that the actual doses of dry tubercle substance administered are only a fifth of the weight stated. Now, given a phial containing 10 milligrams of tubercle bacillary substance, it is a difficult task to administer from it a dose of $\frac{1}{500}$ mg., probably the largest dose we would have to administer in treatment controlled by the opsonic method. The difficulty is easily overcome by having a pipette graduated to $\frac{1}{100}$ths of a cubic centimetre. One-hundredth of a c.c. of tuberculin, equal to $\frac{1}{10}$ mg., is measured into 50 c.c. of a solution of 20 per cent glycerine in distilled water, and the whole sterilised for one hour at 60° C. Each c.c.—roughly ♏xvi—contains $\frac{1}{500}$ mg. T.R. (old style), ♏viii = $\frac{1}{1000}$ mg., ♏i = $\frac{1}{8000}$ mg. On account of the powerful nature of tuberculin it is advisable at the beginning of the treatment to make observations of the opsonic index before and after inoculation. When a suitable dose for the patient has been arrived at, opsonic observations may be discarded, and an inoculation given every seventeen to twenty-one days. Any alteration in the dose should be checked by opsonic observations. In the vaccine treatment of tuberculosis controlled by opsonic observations, the tuberculo-opsonic index in health, taken as unity, is the standard of comparison. The index in a number of healthy individuals is found to vary. The variation is within well-defined limits—the lower limit 0·8, the higher 1·2. In a large series of healthy opsonic indices the average is found to be about 0·96. But although the indices of different healthy individuals vary, the index of each, if blood samples are taken with due regard to time and circumstances, is found to be fairly uniform. It has been shown that in health the tuberculo-opsonic index is affected to a slight extent by severe exercise. Therefore, in comparing indices, it is advisable to take the samples of blood in the morning before exercise has affected the amount of opsonin present. I show on the screen a chart of the tuberculo-opsonic index of a healthy subject taken over a period of thirteen days. Here we see that the variation is very slight (Chart No. 2), in fact the variation might be entirely due to personal error of observation. An interesting observation was made at the end of this period. The subject in question was out all night at a dance, the tuberculo-opsonic index the following morning was found to be 0·9. Professor Sims Woodhead has shown that alcohol also has a lowering effect upon the opsonic index.

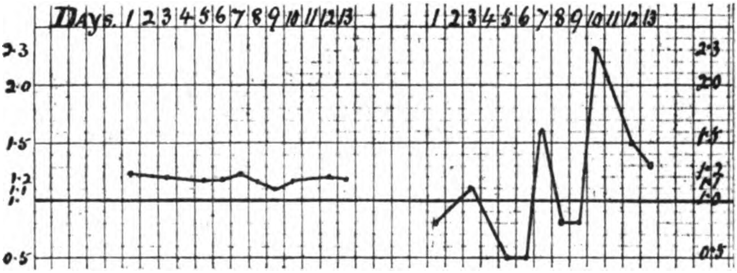

CHART NO. 2. CHART NO. 3.

The next chart I show (Chart No. 3) is typical of a case of pulmonary tuberculosis. It will be seen that the variations in the opsonic index are extreme. In a period of eight days—from the third to the tenth day—we have three auto-inoculations, with well-marked negative phases. One cannot but conclude that this state of affairs is a severe tax upon the mechanism of immunisation, and cannot feel surprise that pyrexia is an accompaniment in many such cases. In referring to this chart I may point out the fallacy of depending upon a single opsonic estimation in the diagnosis of tubercle. On four occasions the tuberculo-opsonic index falls within the limits of health. With only one such estimation made it might be concluded that the patient did not suffer from tubercle; or, knowing from other sources that the patient had tubercle, it might be concluded that observation of the opsonic index was of no value. Both inferences, as demonstrated by this chart, would be erroneous. From a single high, or single low, opsonic index tubercle may be suspected, but from an opsonic index falling within normal limits no definite conclusion can be arrived at. A series of observations such as this is absolutely conclusive.

I am fortunate in being able to show you a chart of the effect of inoculation of tuberculin upon the opsonic content in health. The first few observations show a practically steady index (Chart No. 4). On the sixth day an inoculation of $\frac{1}{2000}$ mg. T.R. was given, and the result is shown in the higher index for a period of three weeks, when a second dose, $\frac{1}{1000}$ mg. T.R., was administered. Following this a steady rise for a week was obtained, the index going as high as 2·2.

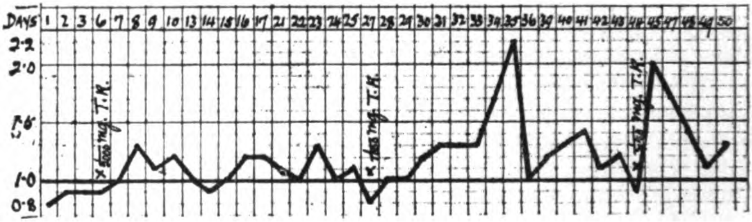

CHART NO. 4.

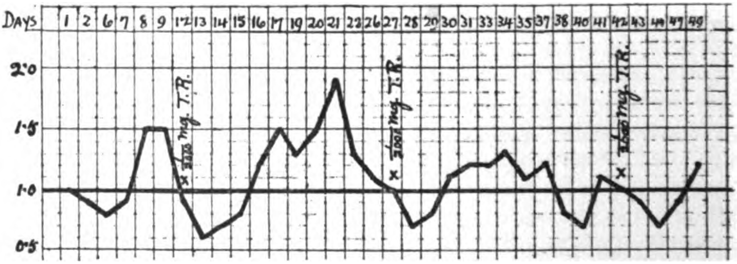

CHART NO. 5.

Seventeen days after the second dose a third and still larger dose, $\frac{1}{750}$ mg. T.R., was given, with an immediate rise in the opsonic content. The chief point of importance in this chart of the tuberculo-opsonic index of a healthy subject is the absence of a negative phase after inoculation, although the dose was increased upon the second and third occasions.

My next chart shows the effect produced by inoculation in a subject of well-marked pulmonary tuberculosis. The dose administered on all occasions was $\frac{1}{2000}$ mg., and the negative phase never failed, even although in the interval the index had risen to a marked extent above normal (Chart No. 5).

A case of tubercular knee-joint comes next, showing the effects of rest, exercise, and Bier's treatment upon the tuberculo-opsonic index. For this case I am indebted to Dr. G. Burnside Buchanan. It is, I think, a very instructive case. Beginning after a prolonged period of rest there is a subnormal but steady index (Chart No. 6); put upon exercise the index, as the result of forcing tuberculous material into the blood-stream, is steadily raised, showing that the auto-inoculations were not too large. A period of rest was again enjoined, followed by treatment with Bier's bandage. The beneficial effect of auto-inoculations is again evident, although more irregular. A period of exercise followed again, the boy being allowed to stump about the ward as he pleased; the daily opsonic index shows the beneficial effect produced. This case evidently was one eminently suited for treatment by exercise after rest.

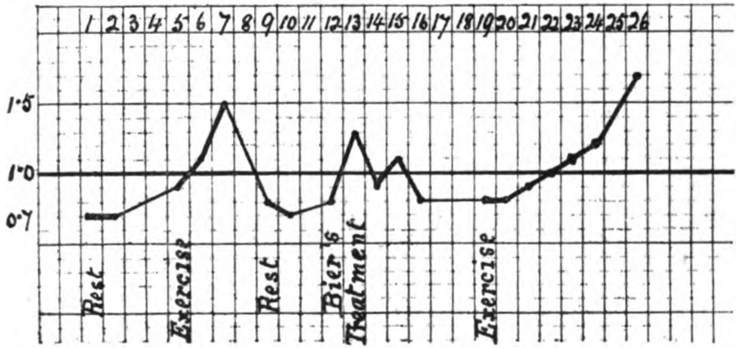

CHART NO. 6.

I wish to mention a case of pulmonary tubercle treated so far successfully by another method. The patient, a female, aged 25, had a lesion in the left apex, followed by extensive left-sided pleurisy and high temperature for three weeks. Tubercle bacilli were abundant in the sputum, which was small in amount. When sufficiently recovered the patient was sent to the country. After a period of about three months there was much improvement in the general health, but the tuberculo-opsonic index was 0·75, and tubercle bacilli were still abundant in the sputum. With the patient's consent I tried the effect of heated anti-diphtheria serum, and injected 2·5 c.c. Daily observations of the opsonic index were made (Chart No. 7), and on the eighth day another dose of 2·5 c.c. was given. From the results obtained I saw no reason to continue the heated anti-diphtheria serum, and next used heated normal horse serum, of which I injected 5 c.c. During the period covered by these injections of heated serum

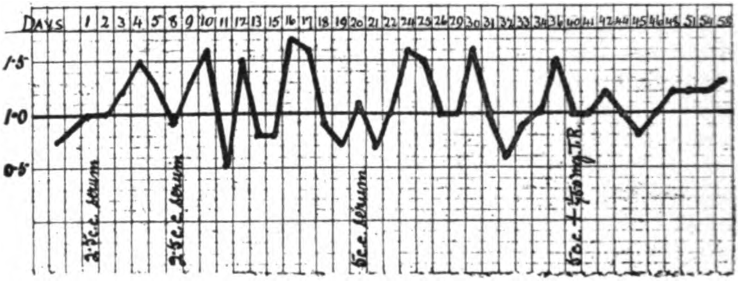

CHART No. 7.

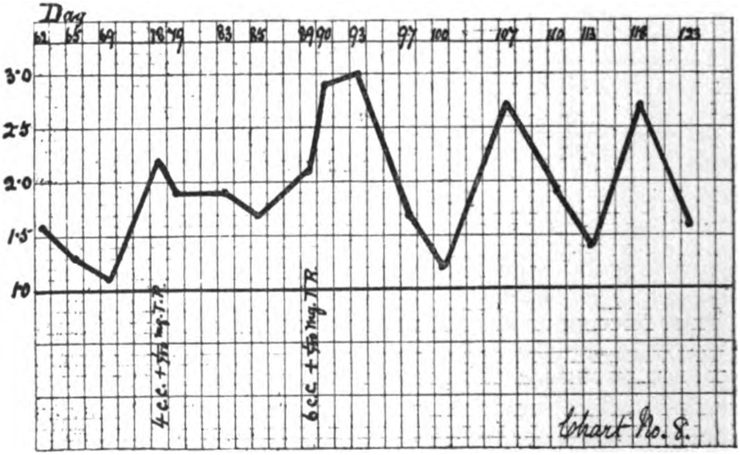

CHART No. 8.

alone there is nothing to distinguish the opsonic chart from that of any case of tubercle of the lungs undergoing ordinary treatment. Therefore, on the next occasion I gave along with 5 c.c. of heated serum $\frac{1}{750}$ mg. T.R. From this time onward begins a sustained high index to the tubercle bacillus, as I show you in the next chart (No. 8). Not only is there a sustained high index; there is no negative phase either after the first or subsequent inoculations of the combined serum and tuberculin. The physical condition at the end of this period—moist sounds in the lungs, none; still impaired percussion note over the area affected by pleurisy; sputum, a trace in which no tubercle bacilli can be found microscopically, after numerous examinations. The patient has been on duty as a Board school teacher for the last six months, and states that she feels quite well.

Obituary.

ROBERT STEEL, M.A., M.B., C.M. GLASG.

DR. STEEL graduated both in arts and in medicine at Glasgow University, and, after qualifying in 1889, was engaged for a time in practice in this city. He held the office of Extra Assistant Physician to the Royal Infirmary, where he had served as House Physician. He was long known to have a cardiac lesion of rheumatic origin, and it was probably on account of his health that he left Glasgow. He settled for a time in North Finchley, London, but was residing more recently at Dollar, and had thoughts, it seems, of returning to Glasgow. He died at Dollar on 30th September.

ROBERT NIVEN, M.D., CH.B. GLASG., D.P.H. CAMB.

DR. ROBERT NIVEN, Medical Superintendent of the West Ham Infirmary, Leytonstone, died there on 23rd September, at the early age of 32 years, after holding the position of Superintendent for just one year. He received his medical education at Glasgow University, where he graduated M.B., Ch.B. in 1898 and M.D. in 1905. Immediately after graduation he became Junior House Surgeon to the West Ham and East London Hospital, where he afterwards became Senior House Surgeon. He next went to Bethnall House Lunatic Asylum, and, while there, studied for the D.P.H.Camb., which he took in 1901. His next appointment was that of Assistant Medical Officer at the South-Western Fever Hospital, Stockwell, after which he became Senior Assistant Medical Officer at the Camberwell Infirmary. He went to West Ham a year ago, and soon afterwards his health broke down. He went first to the King's Sanatorium, and afterwards to Switzerland, suffering from tuberculosis of the right lung. After three months he came back very much improved in health and resumed his duties, but his promising career was cut short by influenza and croupous pneumonia.

CURRENT TOPICS.

ANDERSON'S COLLEGE MEDICAL SCHOOL: APPOINTMENTS.—George H. Edington, M.D., F.F.P.S.G., has been appointed Professor of Surgery, *vice* James H. Nicoll, M.B., F.F.P.S.G., resigned. Dr. Walter Colquhoun, formerly Senior Assistant to the Professor of Physiology, Muirhead Demonstrator, and Lecturer on the Physiology of Muscle and Nerve, in the University of Glasgow, has been appointed Professor of Physiology in the College, in room of Dr. Robert Fullarton, resigned.

GLASGOW HOSPITAL FOR SKIN DISEASES.—In a recent issue we drew attention to the proposed extension of University teaching to the Royal Infirmary. We now have to note another change which will, when completed, bring to an end the independent existence of the Hospital for Skin Diseases.

This hospital was founded in 1861 by the late Sir Thomas (then Dr.) M'Call Anderson and Dr. A. B. Buchanan, with the twofold object of providing gratuitous treatment for the poor suffering from diseases of the skin, and of the advancement of medical science. The hospital was in the form of a dispensary or out-patient clinique, and was situated in rented premises at 63 John Street. In 1878 the hospital acquired premises in Elmbank Street, where it has remained till now.

In 1871 an agreement was entered into with the managers of the Western Infirmary, then newly opened, whereby, in return for a sum of £2,000 contributed by the hospital towards the cost of the infirmary buildings, the hospital enjoyed the use of twenty beds for cases of skin disease sent by it for in-door treatment, together with the right of appointing the physician to those wards. Till his death that appointment was held by the physician of the hospital, Sir Thomas M'Call Anderson. Sir Thomas being at the same time one of the physicians to the infirmary, the members of his class of clinical medicine had the opportunity of seeing the cases under his care in the skin wards, and a further opportunity of studying dermatology was given to students who enrolled at the hospital in Elmbank Street—an out-patient clinique being conducted there. The position was somewhat anomalous, and it was often felt that it would be advantageous for students to be able to attend a clinique for skin diseases in the Infirmary Dispensary, but, in view of Sir Thomas's known wishes, matters were left during his lifetime undisturbed. Since his death the directors of the hospital have given the matter their serious consideration, and, on their recommendation, the subscribers adopted, at a meeting held early last month, a scheme by which the out-patients will be attended to in the large and well-equipped dispensary buildings of the infirmary. The building in Elmbank Street will then be closed.

By another portion of their scheme, the directors propose to hand over £2,500 of the hospital's funds to the University to found a lectureship in dermatology, the lecturer to be chosen from among the physicians having actual charge of the skin departments in the Western or Royal Infirmaries, or in any other public infirmary or institution in Glasgow, where suitable provision is made for the study and treatment of diseases of the skin.

The above scheme will be carried into effect by means of a Provisional Order—under the Private Legislation Procedure (Scotland) Act, 1899—which will probably be obtained in the course of next year.

TERRITORIAL FORCE: APPOINTMENTS TO GENERAL HOSPITALS.—The following appointments were notified in the *London Gazette* of 29th September:—

3rd Scottish General Hospital.—The undermentioned to be officers whose services will be available on mobilisation :—

To be Lieutenant-Colonels—Sir Hector Clare Cameron, M.D.; Samson Gemmell, M.D.; Ralph Stockman, M.D.; Robert Muir, M.D.

To be Majors—Thomas K. Dalziel, M.B.; Henry Rutherfurd, M.B.; James Henderson Nicoll, M.B.; Walter King Hunter, M.D.; John M. Cowan, M.D.; James Walker Downie, M.B.; Andrew M. Ramsay, M.D.; Duncan Macartney, M.D.

To be Captains—William MacLennan, M.B.; James Laurie, M.B.; Robert B. Ness, M.B.; John M'Cubbin Johnston, M.D.; James Carslaw, M.B.; John Towart, L.R.C.P. & S.Edin., L.F.P.S.Glasg.; John Morton, M.B.; Alfred A. Young, M.B.; William Walls Christie, M.D.; Alexander MacLennan, M.B.; Ernest G. Fortune, M.B.; James Campbell M'Clure, M.B.; Robert Fullarton, M.B.; John Gilchrist, M.D.; Alexander H. Edwards, M.D., F.R.C.S.Edin.; Mathew L. Taylor, M.B.; John Gracie, M.B.; Leonard Findlay, M.D.; Charles Campbell Cuthbert, M.D.; Archibald W. Harrington, M.D.

4th Scottish General Hospital.—The undermentioned to be officers whose services will be available on mobilisation :—

To be Lieutenant-Colonels—Alexander Napier, M.D.; James C. Renton, M.D.; John Barlow, M.D., F.R.C.S.Eng.; George Stevenson Middleton, M.D.

To be Majors—Robert H. Parry, F.R.C.S.Edin.; James Hogarth Pringle, M.B., F.R.C.S.Eng.; Thomas Kirkpatrick Monro, M.D.; James G. Andrew, M.B.; John Binnie M'Kenzie Anderson, M.B.; Andrew F. Fergus, M.D.; James Kerr Love, M.D.; David Couper, M.D.

To be Captains—James Hamilton, M.B.; Andrew N. M'Gregor, M.D.; Adam B. Kelly, M.D.; Andrew S. Tindal, M.D.; Douglas W. Russell, M.B.; David Lamb, M.B.; James Maclean, M.B.; George B. Buchanan, M.B.; Hugh Walker, M.B.; Farquhar Macrae, M.B.; Edward Mackay, M.B.; James Weir, M.B.; John A. C. Macewen, M.B.; James D. Holmes, M.B.; John Henderson, M.D.; James R. Chalmers, M.B.; Alexander Fraser, M.B.; David Fyfe, F.R.C.S.Edin.; John S. Barr, M.B.; Joseph G. Tomkinson, M.D.

Lieutenant-Colonel D. J. Mackintosh, M.V.O., and Lieutenant-Colonel R. Pollok have been appointed Commandants respectively of No. 3 and No. 4 Hospitals

THE following are the office-bearers for session 1908-1909 of the various Medical Societies of Glasgow :—

MEDICO-CHIRURGICAL SOCIETY.

President, ...	DR. WALKER DOWNIE.
Vice-Presidents, ...	DR. ROBERT JARDINE. DR. T. K. MONRO.

Council.

Section of Medicine.	*Section of Pathology.*
Dr. Wm. Grant.	Dr. R. Bruce Young.
Dr. John Brownlee.	Dr. Leonard Findlay.
Dr. Donald MacAlister.	Dr. John Anderson.
Dr. Arch. W. Harrington.	Dr. A. A. Gray.
Section of Surgery.	*Section of Obstetrics.*
Dr. J. G. Connal.	Dr. S. J. Cameron.
Dr. Alex. MacLennan.	Dr. John Lindsay.
Dr. M. L. Taylor.	Dr. Wm. D. Macfarlane, Jun.
Dr. G. H. Edington.	Dr. David Shannon.

Treasurer,	Dr. Alfred A. Young.
Editorial Secretary,	Dr. James Scott.
General Secretary,	Dr. Archibald Young.

OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

Hon. President,	Professor Schauta, Vienna.
President,	Dr. J. M. Munro Kerr.
Vice-Presidents,	Dr. G. Balfour Marshall. Dr. Alex. Miller.
Treasurer,	Dr. G. N. Turner.
Secretary,	Dr. A. N. M'Lellan.
Editor of "Transactions,"	Dr. Louise M'Ilroy.
Reporting Secretary,	Dr. Wm. D. Macfarlane, Jun.
Pathologist,	Dr. John H. Teacher.
Past President,	Dr. E. H. L. Oliphant.

Additional Members of Council.

Dr. G. Scott MacGregor.	Dr. J. Laurie.
Dr. Donald Duff.	Dr. S. J. Cameron.
Dr. William Caskie.	Dr. Jane Boyes.

SOUTHERN MEDICAL SOCIETY.

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President,	Mr. Jas. Grant Andrew.
Vice-Presidents,	Dr. J. P. Duncan. Dr. W. K. Peden.
Treasurer,	Dr. Jas. A. Aitken.
Secretary,	Dr. Reginald Dunlop.
Editorial Secretary,	Dr. John Paton.
Seal Keeper,	Dr. R. Yuill Anderson.

Extra Members of Council.

Dr. Jas. R. Chalmers.	Dr. R. J. Carroll.	Dr. D. J. Fletcher.

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Mr. A. E. Maylard (*Convener*).	Dr. John Stewart.
Dr. Thos. Richmond.	Dr. James Hamilton.

Dr. Alex. Miller.

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Seal Keeper,	Dr. Hugh Archibald M'Lean.
Auditors,	Dr. Thos. M'Gibbin Fletcher. Dr. Andw. Parlane Granger.

Council.

Dr. James Battersby.
Dr. Hugh Howie Borland.
Dr. John Wishart Kerr.
Dr. Alexander Munro.
Dr. John Patrick.
Dr. William John Henderson Sinclair.
Dr. Leslie Valentine.

NORTHERN MEDICAL SOCIETY.

President,	Dr. John G. Gray.
Vice-Presidents,	Dr. John Donald. Dr. A. N. M'Lellan.
Treasurer,	Dr. J. B. Miller.
Secretary,	Dr. A. J. Ballantyne.
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Dr. J. G. Connal.
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Dr. John Ritchie.
Dr. C. S. Marshall.
Dr. A. T. Campbell.
Dr. Robt. Langmuir.
Dr. R. G. Inglis.
Dr. Robt. Grieve.
Dr. Robt. Ramsay.
Dr. James Todd.

NEW PREPARATIONS, &c.

From Messrs. Burroughs Wellcome & Co.

1. "*Vaporole*" *Aromatic Ammonia,* 12 in a metal box. These are glass capsules enclosed in an envelope of silk and cotton. When crushed between finger and thumb ammonia is set free, and the vapour may be inhaled. They are intended as convenient substitutes for smelling salts.

2. "*Kharsin,*" "*Orsudan,*" and "*Soamin,*" powder and "tabloids." These are aromatic organic compounds, containing respectively 23·7, 25·4, and 22·8 per cent of metallic arsenic. They are intended for use by hypodermic injection in syphilis, malaria, pernicious anæmia,

skin affections, sleeping sickness, &c., and are far less toxic than arsenious acid. "Kharsin" and "Soamin" are said to have less than $\frac{1}{40}$ of the toxicity of arsenious acid, and "Orsudan" $\frac{1}{5}$ or $\frac{1}{6}$ the toxicity of "Soamin." They are all soluble in less than 5 parts of water, and yield neutral solutions.

3. "*Tabloid*" *Hypodermics.*—Atropine sulphate, gr. $\frac{1}{200}$ and gr. $\frac{1}{150}$; strychnine sulphate, gr. $\frac{1}{100}$ and gr. $\frac{1}{80}$. These are for use in inebriety and narcomania.

From Messrs. Jeyes' Sanitary Compounds Co., Ltd.

Jeyes' Antiseptic Telephone Cap: A metal ring with a diaphragm of gauze. This can be adjusted over the telephone transmitter, and is retained in position by two small springs. The gauze material can then be moistened with antiseptic fluid, *e.g.*, Jeyes' fluid, and thus the danger of infection from the transmitter is minimised. The cap can readily be carried in the pocket and adjusted to public telephones.

From Messrs. The Bayer Co., Ltd.

Autan, a new preparation by means of which formaldehyde and steam can be generated without special apparatus, and by which disinfection of clothes, bedding, rooms, &c., can easily and safely be carried out. Two dry powders are supplied. These are mixed together and then water is added, and the whole rapidly stirred to form a paste. Formaldehyde and watery vapour are immediately evolved and disinfect the surroundings. The preparation is supplied in tins suitable for disinfecting various cubic capacities of from 100 to 3,000 cubic feet.

REVIEWS.

How to Nurse the Patient: A Handbook on Nursing for the Use of those in Charge of the Sick. With Illustrations. Edited by J. Cowan Wilson, M.B., D.P.H. Glasgow: Wm. Hodge & Co. 1908.

This book is the joint work of two medical practitioners and seven trained nurses, who hope that the combination should be an additional recommendation of the volume. It is essentially a manual for nurses, whether professional or domestic. The profits are destined for the building fund of Blantyre Cottage Hospital.

There are 350 pages, including a brief history of the evolution of nursing, a glossary of medical terms, and a copious index. While all the usual features of such a guide are here, room is also provided for articles on lavage, gavage, massage, Swedish exercises, preparations for operations, and the making of saline infusions. How to nurse a cerebro-spinal meningeal case brings the book up to date.

Regarding a work published with a philanthropic intention, a critic cannot find serious fault with the many advertisements printed in the volume, but none of them should have been sandwiched between the pages of the reading matter.

Altogether, the book is creditable to the hearts and heads of the editor and assistants, while the printer and publisher have ably seconded.

Cancer. By G. SHERMAN BIGG, F.R.C.S. Ed., M.R.C.S. Eng., L.S.A. London: Baillière, Tindall & Cox. 1907.

IN this little book of 95 pages the author gives expression to views which can scarcely be described as orthodox. Believing, as he does, that "the origin of cancer is a primary condition of congestion in an individual whose constitutional vitality is impaired and whose recuperative power is diminished," he thinks that constitutional treatment is of paramount importance. But when he states definitely, as in the section on cancer of the breast, that operation should be confined to the smallest possible limit, and that glands should not be removed at the time of the primary operation, he is scarcely likely to have the concurrence of many present-day surgeons. The title is more comprehensive than the book, but presenting, as it does, views which may claim a certain degree of originality, the volume may be worthy of perusal.

Cancer: Relief of Pain and Possible Cure. By SKENE KEITH, M.B., F.R.C.S. Edin., and GEORGE E. KEITH, M.B., C.M. London: Adam & Charles Black. 1908.

AMIDST the numerous literary outpourings on cancer and malignant diseases generally, we welcome this little book. The authors are modest in their choice of a title, yet the relief of pain in those afflicted with this dreadful disease is something accomplished. The book contains an excellent introductory chapter containing a criticism of the more recent "cures" of cancer. Also therein is described the authors' own treatment. The latter part of the volume contains the records of cases of carcinoma and sarcoma.

The writers are deserving of much praise for their painstaking observations and results fraught with the greatest benefit to their patients.

We heartily recommend this little work to our readers.

Cancer of the Stomach. By A. W. MAYO ROBSON, D.Sc., F.R.C.S. London: James Nisbet & Co., Limited. 1907.

IN this volume of Nisbet's *Modern Clinics* we have an exposition by Mr Mayo Robson of cancer of the stomach.

In the introduction the author remarks on cancer generally, and comes to the conclusion, beyond which we cannot get at present, that of the predisposing causes of cancer we know next to nothing. All that we do know is that irritation is an exciting cause; that the disease is at first local; and that cancer is auto-infective. This last has been shown by results of imperfect operations; but there is still doubt as to the inoculability of a healthy surface with disease from a neighbouring part of the body, as from lower to upper lip.

Chapters are devoted to the anatomy of the stomach, and general diagnosis of stomach diseases, cancer of the stomach, simple tumours liable to be mistaken for cancer, dilatation, &c.

The chapter concerned with the symptoms of cancer of the stomach is good, and contains much valuable information. The principles of treatment and the details of operative procedure are clearly laid down. There is also an interesting account of conditions which may be mistaken for cancer.

As in former works by this author, we have here a combination of wide personal experience and reference to the practice and opinions of others. The volume is one which we can recommend cordially to the profession.

Transactions of the American Climatological Association, 1907. Vol. XXIII. Philadelphia, 1907.

THIS volume deals very largely with the problem of tuberculosis and its treatment. No fewer than one-third of the papers are so devoted to different aspects of that problem, such as the effect of altitudes and of sanatorium treatment on pulmonary phthisis. The writer on the subject of altitude focuses his consideration of the subject by affirming that "high altitude is not an essential in the treatment of tuberculosis, but that the great majority of cases can be treated to best advantage at low elevations." In a discussion on the importance of supervision of patients after leaving sanatoria, all the speakers dwelt on the great need there was for supervision, since many working patients were themselves unable to maintain adequate continuance of open-air conditions. It will be observed that opinion in America coincides with that at home on this matter.

Several papers are of especial interest, notably those on the climates of New Mexico and the Angola Highlands, West Africa; on sanitation in Panama; on hot springs, Virginia; and some notes on Aix-les-Bains. The paper on Panama is especially interesting, in that the subject-matter is freely illustrated by excellent photographic reproductions. It may be remembered that the Panama route between the east and west coasts of America through the isthmus of that name, which was undertaken under French auspices and with French capital, had in the end to be abandoned owing to the enormous mortality among the workmen employed from yellow fever, remittent malaria, small-pox, &c. Indeed, it was averred that every railway tie which was laid represented a death; and, as a matter of fact, the death-rate was 67 per cent. The causes to which that high mortality was attributed were mainly these:—(1) Entire absence of rigid quarantine service, which permitted the introduction of yellow fever, small-pox, and bubonic plague; (2) the condition of filth and rank vegetation which existed all along the line of canal, and the absence of drainage of the surface of the ground in the neighbourhood of places in which the workers lived, thus enabling mosquitos to breed freely and spread malaria; and (3) the absence of sanitary measures and police. Forewarned by that experience, those who promoted the Nicaraguan route devised preventive measures of a most effective character, placing sanitation in the preliminary stages of the work ahead of all other considerations. The new company established quarantine stations, street cleaning and garbage cleaning corps were organised, streets were sprinkled, rats were exterminated, sanitary inspectors were set at work, mosquito brigades were formed, and disinfection brigades were instituted, who entered and disinfected the houses of the natives after infectious diseases had been present in them; further, a sick inspection corps patrolled every populous place along the route for the purpose of discovering the sick and sending them, willing or unwilling, to hospital. Water tanks were systematically examined as well as reservoirs, surface puddles were swept away, until the mosquito, deprived of its breeding grounds, became almost a thing of the past. Moreover, hospitals were established all along the line of the canal, and an ambulance service established between receiving hospitals and the main or base hospitals at the end of the line. The combined effect of these drastic measures was that during the construction of the canal the death-rate from climatic diseases was only seven-tenths of one per cent. We do not know, indeed, of any better object-lesson anywhere of the visible benefits which may arise from a masterful sanitary policy intelligently devised and thoroughly carried out in detail than this. The staff employed to carry through this efficient policy was enormous in numbers. In 1906 the number of men in the sanitary department was 2,373; the number of physicians in 1907 was 87; the number of male nurses, 26; the number of female nurses, 103; and the number of hospitals, 9, with 1 sanatorium.

Taken all through, this volume affords much instructive and interesting reading, and will repay perusal by those who interest themselves in questions of climatology.

Catalogue of Electro-Medical Apparatus and Allied Apparatus of every Description manufactured by the SANITAS ELECTRICAL CO., LTD., 61 New Cavendish Street, London, W. 1908.

THE Sanitas Electrical Company has not only produced a large and well illustrated catalogue, but has also attempted to give some guidance as to the use of the apparatus. The catalogue contains 333 pages. The illustrations are numerous and good, almost every page contains several. In some cases they are overdone. Thus, those showing how Schnee's four-cell bath can be used in fifty different ways, and the following pages on "The selection of the switching of the current for the different complaints," are no addition to the value of the catalogue. The prices throughout seem to be much the same as those of other makers.

The Chemical Basis of Pharmacology, an Introduction to Pharmaco-dynamics based on the Study of the Carbon Compounds. By FRANCIS FRANCIS, D.Sc., Ph.D., and J. M. FORTESCUE-BRICKDALE, M.A., M.D. Oxon. London: Edward Arnold. 1908.

THE quotation from Locke which is placed at the beginning of this book fitly states our ignorance of the reasons for the actions of drugs—we do not know the "mechanical affections of the particle of rhubarb, hemlock, opium, and a man . . ." Physiology has laboured greatly and not altogether in vain to elucidate the functions of the "particles of a man," and pharmacology, associated with organic chemistry, has laboured, though to smaller purpose, to do the same for drugs. The authors of this book have endeavoured to give a synopsis of what has been done with regard to the organic materia medica, and so open up, what is to most medical men, practically a new field, of which the literature is somewhat scattered, though by no means scanty (judged by the mass of pamphlets brought by every post). They give an enormous mass of information as to the preparation, chemical structure, and chemical affinities of the various drugs mentioned, and also try to show how the composition of the drugs is related to their pharmacological action. In bacteriology there are Koch's well-known postulates, and in order that an organism be regarded as the specific cause of a morbid state it must satisfy these postulates as completely as possible. So in pharmacology, Sainsbury has formulated what might be called the postulates of pharmacology, viz., we must have proof (1) "that in a series of compounds containing, as a constant, one element, or a group functioning as an element, there is traceable a corresponding constancy of effect"; and (2) "that in a series of compounds, built up on the same type, there is traceable a constancy of effect, corresponding to the constancy of type." These postulates, though they have been modified by other writers, may be regarded as quite fair demands.

In examining the statements made in this book in the light of these postulates, it is evident that in the case of a very large number of the substances mentioned it will require much further experiment and much fuller information before their pharmacological action can be fully related to their chemical structure. The remedies are grouped together for the purposes of comparison and contrast, and the grouping is done, as far as possible, on chemical lines. There are seventeen chapters. The first chapter is an introductory one, in which a short sketch of the more important facts of organic chemistry (viz., theory of valency, structural formulæ, isomerism, inertia of carbon systems) is followed by an introduction to the physiological aspects of pharmacology. This chapter is interesting and easily read. The succeeding chapters, however, deal with the various groups in such a fashion that only a very limited number of medical men will take the time or trouble to read them through, far less to master the huge mass of details. The second chapter deals with the chemistry and general physiological characteristics of the hydrocarbons—aliphatic and aromatic. The authors try to condense into thirty pages material that would require a large volume to itself, and so a perusal of the chapter leaves behind a sense of irritation. In the next chapter (III) the changes in organic substances produced by metabolic processes are given under the headings, Synthetic processes, Oxidation, Reduction, and here, too, the condensation of much material into small bulk is not quite satisfactory. Of the following chapters, two are devoted to the alcohols and their derivatives, two to the aromatic hydroxyl derivatives (in one of these, useful tables of antiseptic powers of phenol derivatives are given), one to antiseptic and other substances containing iodine and sulphur, two to derivatives of ammonia, one to the urea and purin group of derivatives, three to alkaloids occurring naturally, one to synthetic substances with actions similar to some alkaloids, one to the glucosides, and, lastly, one to the dependence of taste and odour on chemical constitution.

It is obviously impossible in the compass of one small book to enter into lengthy discussions of all the pros and cons of each statement, and thus the general impression left in one's mind after reading this book is that there is a great deal of assertion, with an unsatisfying amount of information. In fact, the book may be compared in usefulness to these smaller dictionaries which always disappoint when consulted. This book is the more disappointing in view of the ambitions of its authors as stated in the preface. They express the hope that it may point the way to reform in the teaching of materia medica, and that, "as an introduction to a rational appreciation of one aspect of pharmacology, it may be of use both to the student, and to the practitioner who is daily brought in contact with the claims of new drugs, new preparations, and new trade names." If the ordinary medical student were required to study such works in addition to the ordinary and necessary text-books on therapeutics and materia medica, it would take years instead of months to gain a passable knowledge of the subject. The general practitioner of to-day is the student of yesterday, and books of this kind, though interesting to a specialist, are not suited for general consumption. From the specialist's point of view the book is disappointing, and must be classed as little more than an index of a large number of present-day synthetic and natural organic remedies. At the same time it must be stated that in some of the pages devoted to the more general discussion of groups of remedies, the facts are stated fairly fully and in a very readable way. The book should either be made full enough to serve as a work of reference and text-book for special students, or it should be reduced in size and much simplified, so that the ordinary student and general practitioner might read it with profit.

Manual of Diseases of the Ear, Nose, and Throat. By JOHN JOHNSON KYLE, B.S., M.D. Second Edition. London: Sidney Appleton. 1908.

THIS work is an attempt to compress into a single comparatively small volume the embryology, anatomy, physiology, pathology, symptoms, diagnosis, and treatment of diseases of the ear, nose, and throat. From this statement it is obvious that, in general, the work must be superficial in character. The anatomical section is not very satisfactory; and the plates illustrating this portion are almost all obtained from other sources, and are not very good. The chapter on general therapeutics is clear, but some of the most valuable methods of local anæsthesia and treatment are not mentioned. Suppuration from the middle ear is treated more fully than many other subjects, and the importance of intracranial complications is properly insisted on. But even in this subject the methods of treatment do not receive proper justice. The section on otosclerosis, perhaps the most interesting, and certainly one of the most important of diseases of the ear, is dispensed with in less than two pages! Arteriosclerosis of the labyrinth, by which the writer apparently means arteriosclerosis of the artery of the labyrinth, receives two and a half pages of description. The figure which depicts adenoid growths in the "rhino-pharynx" is taken from Grünwald's work, but is inserted upside down.

One feature of the work is good—the prescriptions are given with both the metric and English weights and measures together.

We are sorry we cannot give a more favourable review of this work, but it is difficult to see what object was to be attained by writing it. The only excuse for a new work on the ear, nose, and throat is that the writer should be able to present the subject from an original and independent point of view, or that he has some new light to throw upon the matter. Neither of these conditions is fulfilled in this work.

A Manual of Surgery. By FRANCIS T. STEWART, M.D. London: Rebman, Limited. 1907.

THIS is a new work on surgery, containing in readable compass much valuable material. The whole field is covered, including bandaging and gynæcology, and in a small manual this necessarily means that much information has to be omitted. Yet there are few questions in surgery which are not mentioned, and much recent work is embodied. The section on general principles is fairly detailed, and the regional part is accurately written and gives interesting reading. There are many illustrations, some from photographs, explaining the text well. As a rule these are faithful pictures, though an exception is seen on page 175, where in our opinion the drawing of a lipoma fails.

The work altogether forms an excellent brief compendium, and our only regret is that the author did not see fit to expand it into a larger work. From its style and wealth of information it can be confidently recommended to all students.

Essentials of Surgery. By ALWYNE T. COMPTON, F.R.C.S Kimpton's Essential Series. London: Henry Kimpton. 1908.

BASED as this synopsis of surgery is on many well known works, it may be said that in a general way it will serve as a reliable guide to those who are anxious to get hurriedly at the main features of any surgical ailment; it cannot, of course, serve as a text-book, and makes no attempt to do so.

The first chapter, on inflammation, seems to us the least satisfactory one in the book. However accurate scientifically, it lays too little stress on the activity of pyogenic organisms in the production of inflammation as it is known to the student of surgery, and while such terms as "sthenic fever" and "asthenic fever," with a recommendation of leeching as a form of treatment, seem to savour of antiquity, on the other hand, the mention of patent and proprietary articles as proper treatment is perhaps a little before the times.

This apart, there are several small details which might with advantage be put right when the book comes to a further edition. Spirochætes might be mentioned in connection with syphilis if "cancer bodies" find a place. "Obstinate constipation" might be omitted as a symptom of acute peritonitis, and more stress should be laid on rigidity of the abdominal wall; while loss of liver dulness occasionally is also worth mention.

The diagnosis of enlarged prostate may be confirmed by rectal examination, but is surely made from the symptoms and the features mentioned under the heading "Results." The definition of hæmorrhoids could be made more accurate and concise by the omission of the word "inferior." Several other well known deformities might be included in the last chapter.

The book is very cheap, well got up, and should prove popular.

Guy's Hospital Reports. Edited by F. D. STEWART, M.S., and HERBERT FRENCH, M.D. Vol. LXI. London: J. & A. Churchill.

THIS as usual consists of a collection of original articles on scientific and clinical subjects. There are communications on medicine, surgery, physiology, pathology, embryology. Mr. R. P. Rowlands has a remarkably clear discussion on gastrojejunostomy, adequately illustrated. Perhaps the most interesting and unusual paper is that by Dr. A. F. Hertz, on the passage of food along the alimentary canal, studied by the *x*-rays after ingestion of a "bismuth breakfast," by auscultation, percussion, and palpation. The conditions during swallowing, and the passage of food through the stomach and along the various parts of the intestine, are fully considered, and their variations in pathological conditions, such as stricture, are studied. Any of the other papers might be cited as of great interest, and the whole book is a valuable possession.

Lectures on Medical Jurisprudence and Toxicology. By F. J. Smith, M.D. Second Edition. London: J. & A. Churchill. 1908.

While there may occasionally be some justification for a man who sets out to write a text-book on a subject, it must be rare, indeed, to find adequate reasons for publishing a series of lectures on these subjects in book form, and Dr. Smith has missed the opportunity of proving that there may be exceptions to this rule. The personal charm is altogether absent from printed lectures, and this explains the failure of the present work. Further, as the author admits, he was accustomed to enliven the time when lecturing by quoting cases in which he was recently engaged or which were occupying the pages of the daily press. These cases do not appear, under the circumstances, in Dr. Smith's book, and hence there is an absence of enlivenment or even elucidation.

The author states in the preface that his audiences for some years have been so favourably impressed with the utility of these lectures that he has been "repeatedly requested to allow them the opportunity of reading them at their leisure." Do Dr. Smith's students trust to their memory in the case of lectures of such "utility"?

The general arrangement of the lectures is somewhat haphazard—indeed, the author admits that he does not know from what source he adopted the order of his various subjects. As a result, the arrangement, possibly like the lectures themselves, is rather of a desultory nature.

Scotland receives small consideration from Dr. Smith in his first lecture on legal procedure, &c.

In the second lecture the author gives some curious advice regarding the conduction of a medico-legal *post-mortem*. For example, the student is recommended to remove the sternum and ribs with bone forceps and not with a saw. It is certainly not customary to remove the ribs, either with bone forceps or saw, in such examinations in Scotland.

There are, of course, no illustrations, properly speaking, in the book, and it would have been well had Dr. Smith made this rule absolute, as the representation of various fibres on page 63 is merely ludicrous.

In the consideration of the tests for blood-stains, the author says he has a very poor opinion of the usually described colour obtained in the guaiacum test, and mentions that when using a drop of fresh blood from his own finger he often enough got a dirty green colour. This is certainly not the fault of the test.

Dr. Smith recommends that, in taking the temperature of an alleged corpse, the thermometer should be put into the rectum or vagina, and not simply estimated with the hand on the skin, the latter method being most fallacious. One wonders if medical jurists are in the habit either of taking the temperatures of alleged corpses in the rectum or vagina, or of estimating the same by the hand on the skin.

The author apparently still believes that *post-mortem* hypostases only begin to appear some hours after death.

The lectures on toxicology only skim the surface of the subject, and are, if anything, even more out of place in the form of lectures than the other parts. Here, also, the treatment is somewhat slipshod. For example, on page 348 we are informed that nitric acid gives no precipitate with barium nitrate, thus distinguishing it from hydrochloric or sulphuric acid. The bromine water test for carbolic acid is not mentioned. In the same way the very delicate test for mercuric salts, viz., stannous chloride, is not indicated.

Some of the author's remarks in the lecture which includes the questions in the "Coroner's Catechism" are puerile, and, while not strictly out of place in the lecture-room, should have been expurgated before publication in book form.

It is to be hoped that Dr. Smith's students make good use of their text-books in addition to their lectures.

The Diseases of Workmen. By T. LUSON, M.D., and R. HYDE, M.R.C.S. With an Introduction by His Honour JUDGE RUEGG, K.C. London: Butterworth & Co. 1908.

THIS handy little book furnishes a good epitome of the diseases arising in connection with dangerous trades, and it cannot fail to be useful to all persons interested in the administration of "The Workmen's Compensation Act, 1906."

The various diseases and their sequelæ are treated at sufficient length, but without any unnecessary elaboration. The language is clear, but the introduction of explanations of medical terms throughout the text does not tend to elegance of style. These explanations are, of course, for the benefit of the non-medical reader.

The subjects treated are—anthrax; lead poisoning or its sequelæ; mercurial poisoning or its sequelæ; phosphorus poisoning or its sequelæ; arsenic poisoning or its sequelæ;

ankylostomiasis; poisoning by nitro and amido derivatives of benzine (dinitro-benzol, anilin, and others) or its sequelæ; poisoning by carbon bisulphide or its sequelæ; poisoning by nitrous fumes or its sequelæ; nickel carbonyl poisoning; arsenic and lead poisoning (handling); poisoning by gonioma kamassi (African boxwood); chrome ulceration or its sequelæ; eczematous ulceration of the skin produced by dust, or caustic or corrosive liquids, or ulceration of the mucous membrane of the mouth produced by dust; epitheliomatous cancer or ulceration of the skin or of the corneal surface of the eye due to pitch tar or tarry compounds; scrotal epithelioma (chimney-sweep's cancer); miner's nystagmus; glanders; compressed air illness or its sequelæ; subcutaneous cellulitis of the hand—"beat hand"; subcutaneous cellulitis over the patella; "beat elbow"; inflammation of the synovial lining of the wrist-joint and tendon sheaths.

The introduction by His Honour Judge Ruegg, K.C., is worthy of careful perusal, and the insertion of section 8 of "The Workmen's Compensation Act, 1906," will prove very convenient for reference.

We cordially endorse the following remarks by Judge Ruegg on the work under consideration:—"It is a book not only wanted, but for which, in my opinion, an absolute necessity exists, and I am convinced it will prove a convenient *vade mecum*, not alone for medical men and lawyers, but for arbitrators and judges likewise."

We recommend every general practitioner to purchase this little volume, for he will find in its pages the key to the diagnosis of many obscure and puzzling cases, the true nature of which may be easily overlooked by a man who neglects to enquire carefully into the nature of the occupation of his patient.

Ophthalmic Surgery. By DR. JOSEF MELLER. Translated by WALTER PYLE, A.M., M.D. London: Rebman, Limited. 1908.

THIS book is in the main good, and is a careful synopsis of the subject with which the author deals. We have perused the book carefully, and although we have not come across anything that is new, still the volume in question is convenient for reference. All the ordinary operations are well and fully described, and the author, who evidently has had a large operative experience, in many cases gives useful additional information as to his own special technique in carrying out an operation.

As regards lachrymal diseases, we are glad to find that he agrees with us on two points, namely, that Bowman's probes are probably the best yet made, and that slitting of the canaliculus in the treatment of dacryo-cystitis is wrong and unnecessary. These are two doctrines which we have been teaching for the last eight or ten years, but now that somebody who lives in Vienna has announced these almost self-evident propositions, people will begin to take notice of them.

We are somewhat sorry to find that he still describes suture operations, such as Pagenstecher's suture operation, for ptosis. It is difficult to understand how anyone with a modern training can recommend so bad and crude an operation. We think, too, that sutures should not be used for ectropion of any kind.

We do not quite agree with Meller as to tenotomies for squint. They should never be the primary operation; but we quite concur with him as to the danger of simultaneously advancing the external rectus and dividing the internal rectus of the same eye. The operation is obviously a very bad one, and we are surprised to hear that it has ever been performed. We entirely agree with the author in his adverse criticism of it.

The section on cataract work is good and carefully written, as is also that on glaucoma.

Take it all in all, the book is excellent, and one which will be found to be reliable.

Clinical Methods: a Guide to the Practical Study of Medicine. By Robert Hutchison, M.D., F.R.C.P., and Harry Rainy, M.D., F.R.C.P.Edin., F.R.S.E. With 11 Coloured Plates and 148 Figures in the Text. Fourth Edition, thoroughly Revised. London: Cassell & Co., Limited. 1908.

This popular work, which, if reprints are included, has now been issued from the press a dozen times, has gained so secure a position in the estimate of clinical students as to be really independent of a reviewer's comments. It is the very thing that is required by students, house physicians and surgeons, and junior practitioners. It is full, and yet not too large. It should, in short, give the highest satisfaction to the readers, as it reflects the highest credit on the authors.

Urologisch-Kystoskopisches Vademecum. By R. WOHLAUER.
Wiesbaden: J. F. Bergmann. 1907.

THIS is a handbook of genito-urinary conditions, chiefly surgical, written by Nitze's assistant, and embodying the teaching and practice of his clinique. About one half is devoted to clinical methods, and these are fully considered. The remainder of the work consists of a very clear and accurate synopsis of diseases considered systematically, including their etiology, complications, and treatment. The whole outlook is practical, and the information given is reliable and comprehensive, while the text is simple and easily read. Some of the photographs of cystoscopic views are excellent, and the diagrams of other conditions are clear. The book may be regarded as a concise and very useful exposition of the best thought on the subject.

ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

MEDICINE.

Splenic Anæmia, Splenectomy, and Recovery: With Studies of the Blood, covering a Period of Seven Years. By Morris J. Lewis, M.D. (*Amer. Journ. Med. Sciences*, August, 1908).—This patient (a boy of 13 years) came under particular observation in 1900, at which time enlargement of the spleen was first detected. He was not in good condition, and quite pallid, with a decided bronchitis. Quinine, iron, and arsenic were administered with apparent benefit. In March, 1901, red cells numbered 5,260,000 per cubic millimetre; leucocytes, 5,460; hæmoglobin was 74 per cent. There was marked poikilocytosis. No enlargement of the spleen could be detected. In May, 1902, red cells numbered 4,688,000; leucocytes, 8,000; and the hæmoglobin was 69 per cent. Poikilocytosis, although slight, persisted. In October, 1902, red cells numbered 5,400,000; leucocytes, 4,800; hæmogloblin, 72 per cent. The spleen was greatly enlarged, and the patient was pale and languid. By the spring of 1903 decided improvement had taken place. Red cells were 5,420,000; leucocytes, 6,200; and hæmoglobin, 84 per cent. There was no poikilocytosis. The colour had improved and the spleen had diminished, although still enlarged. In the autumn of 1903 he looked better, but the spleen remained the same; the red cells had fallen to 4,340,000, and the hæmoglobin to 69 per cent. By the spring of 1904 his appearance had further improved, the red cells had risen to 5,020,000, and the hæmoglobin to 90 per cent. On the evening of 22nd May, 1904, he vomited a little blood. On the morning of 25th May he vomited a large quantity of blood. During the day this vomiting of blood was twice repeated, and later in the day he had a large tarry stool. When seen in the evening he was very pale, and had violent pain to the right of the ensiform cartilage. The abdomen was distended, but there was no rigidity. Stomach was greatly distended. Temperature was 102° F. Tarry evacuations continued, and he was removed to hospital. Hæmoglobin was now 30 per cent, and the red cells 2,200,000. The area of splenic dulness had decreased decidedly. On the 26th hæmoglobin had fallen to 25 per cent, and brighter blood was being passed with the stools. Posterior gastro-enterostomy was performed after considering the question of gastric or duodenal ulcer. The patient slowly rallied from the operation, and during the next two days had fourteen bloody evacuations. By 29th May all bleeding had ceased. On 31st May hæmoglobin percentage was 18. Recovery from the gastro-enterostromy was uneventful. The spleen remained enlarged, and shortly afterwards there was enlargement of the liver with ascites. By September he had so far recovered as to be able to walk without fatigue. Hæmoglobin was 52 per cent, red cells numbered 3,400,000 and showed slight poikilocytosis, and the leucocytes were 4,200. By October the spleen had greatly increased, hæmogloblin was 54 per cent, and the red cell count 4,200,000. Splenectomy was performed on 14th October, 1904, the spleen being firmly adherent. Patient made a good recovery, although pleurisy and pericarditis occurred as well as a secondary abscess in the wound. The sinus did not close entirely till October, 1905. Since then he has always had good health, and can indulge in active exercise without discomfort. The blood examinations are fully detailed upon charts. On 20th February, 1908, the red cells numbered 4,900,000 and the hæmoglobin was 84 per cent. A leucocytosis up to 24,000 occurred after the operation, evidently due to the inflammatory complications. From a month after the average leucocyte count has remained 10,000. A marked eosinophilia occurred immediately after the operation. Ten days after the percentage of eosinophiles was 11·2 out of a total leucocyte count of 16,000. No lymphocytosis occurred.

The spleen weighed 790 grammes and measured 20 by 13 by 7 cm. It was firm, irregular, and very adherent. Microscopic examination of sections showed chronic perisplenitis and interstitial splenitis.

—Arch. W. Harrington.

SURGERY.

The Importance of Fibrolysine in Surgery. By M. Costa (*Gazz. Intern. di Med.*, 1908, No. 3, abstracted in the *Gazette des Hôpitaux*, 11th August, 1908).—The author bases his remarks on a case of extensive cicatrices following burning. The burns were situated on the whole extent of the right side of the trunk, and on the arm and leg. The skin was at these places hard, tendinous, and non-elastic. Cicatrisation gave rise to an adhesion of the entire arm with the body, and ankylosis of the fore-arm and leg. The patient could neither walk nor use the arm, which was trussed up against the chest, and operation was not considered on account of the leathery nature of the skin. In order to render the tissue supple injections of fibrolysine were given preliminary to operation. After a few injections a considerable modification was noted in the skin, which recovered a rose tint, and showed formation of numerous small blood-vessels. It also became soft and mobile like the physiological tissue, and the injections were well supported. After injection of the twenty-seventh ampoule, the patient was able to walk without assistance, to move the femur, to flex and extend the fore-arm, and to carry the arm 10 centimetres from the trunk. Operation was then done without difficulty. The author concludes that fibrolysine is a precious remedy in the treatment of cicatricial skin contraction.

—Spencer Mort.

The Surgical Treatment of Perforation in Enteric Fever.

By F. Moty (*Gazette des Hôpitaux*, 9th July, 1908).—American statistics give the frequency of typhoid perforation as 1 in 300 cases. In France and Algiers it appears to be about 1 in 100, hence this complication must be recognised as one of relative frequency. Surgical intervention rests on three fundamental conditions—the known activity of the peritoneum in dealing with organisms when their focus of production has been subdued, the fact that the causal typhoid fever is in itself not necessarily fatal, and the knowledge that in most cases suture of the perforated bowel can well be done.

The most certain and constant sign of perforation is sudden pain commencing at the umbilicus and soon becoming general over the peritoneal region. Sudden pain may be got without perforation, but is unaccompanied by other signs. These other evidences are those of peritonitis, of which the most important is the elevated toxic pulse. In only a very small minority is there slowing of the pulse due to action on the solar plexus, as is noted after abdominal contusions. Intestinal obstruction and troubles in micturition are less constant signs. A very important sign is the changed appearance of the features of the patient, so characteristic as to be almost never deceptive.

Regarding prognosis, it is known that the nearer the typhoid attack is to a finish, the greater success of operation, since new perforations become less probable at that period, and the resistance of the patient is increasing. The gravity of the attack has also a relation to the successful reaction of the peritoneum. The condition and extent of the perforations influence the prognosis, and such extent can in no way be diagnosed from general signs. The earlier the operation the greater is the chance of success, when the peritoneum has not been extensively soiled. In all cases, however, the outlook is very bad, for not only has the patient become exhausted by the primary disease, but he has also to survive a general peritonitis and a severe traumatism caused by operation. In spite of this, operation is the only treatment. In a small number of cases life is saved, and in the others there is at least an amelioration of the abdominal pain, allowing relief to the moribund patient.

Usually the abdomen is opened in the middle line, or in the right linea semilunaris, in the first case allowing better cleansing of the peritoneum, and in the second giving a better region for fixation of a perforated loop of bowel to the skin in cases where suture is impossible. After evacuation of bile-stained or fæcal fluid, the bowel is rapidly mopped clean and search made in the cæcal region for perforations. The colon is covered with flakes of lymph, and usually the perforations are easily seen on the ileum, often very small, at the centre of reddish plaques of discolouration on the bowel wall opposite the mesenteric attachment. Sometimes the cæcum itself is perforated, when greater search is required. Sometimes the bowel wall is strong enough to support suture round the perforation. Usually it is very friable, and, at the best, a distant purse-string suture is made and the perforation invaginated. A good method of reinforcement of the sutured part is to detach a portion of neighbouring omentum and suture it also over the spot, with, in addition, a stitch to secure the omental fragment to the adjoining bowel mesentery to prevent dragging on the sutured spot. Where the bowel wall is so fragile that it does not support suture, resection with end to end anastomosis may be done, or fixation laterally of the perforated loop to another healthy loop, but these are both risky methods, involving considerable time in their performance, and might well be omitted in favour of drawing out the perforated loop to the skin and forming a temporary fæcal fistula. The abdomen is closed as rapidly as possible, and drainage allowed through part of the wound and through counter openings.—Spencer Mort.

Sensitiveness of the Abdominal Viscera. By Professor Dr. Carl Ritter (*Zentralbl. f. Chirurgie*, May, 1908).—Previous research into the sensitiveness of the abdominal viscera has been made by Lennander, whose results, however, were called in question by Meltzer and Kast. Lennander, as a result of his research in this question on human beings, was of the opinion that the parietal peritoneum is very sensitive, but that the viscera themselves are sensitive to neither touch, nor heat and cold, whether in a normal or in an inflamed condition. Thus, he held that diseases of the abdomen caused pain only where the parietal peritoneum was stretched or torn, or was invaded by an inflammatory process.

On the other hand, Meltzer and Kast, whose experiments were carried out on dogs and cats, were convinced that the viscera were sensitive even in a normal condition, and much more so when inflamed. In their work when there was absence of sensation (heat, cold, touch, pain) in the viscera, this was clearly accounted for by the very definite action which cocain (used as a local anæsthetic) has on the bowels, &c. They found that a very small dose of cocain given either subcutaneously or intramuscularly at once destroyed the sensitiveness of the viscera whether normal or inflamed.

Doubt has been cast on these results of Meltzer and Kast by many workers, including Müller; whereas Bier found in operating on large hernias of long standing that the parietal peritoneum was very much more sensitive than the visceral, and Haim found that if the abdomen was opened (painlessly) under local anæsthesia, the contents of the abdomen, viz., stomach, small and large intestines, gall-bladder, liver, &c., could be palpated and handled without causing any pain.

Ritter very rightly decides that the question is not one to be settled offhand. He does not approve of the haphazard way in which the subject had been treated. His attention was first called to this question by noticing in a dog, on which he was performing an entero-anastomosis, that each puncture of the wall of the bowel by the needle caused it to call out although it was deeply narcotised with morphia. On a second occasion, in operating on a dog under the influence of morphia, the same thing was noticed. Later on, during an operation in which a large section of the small intestine was being slowly deprived of its blood-supply by ligation of the mesentery bit by bit, he again noticed that although the animal was asleep, under the influence of morphia, intense pain was caused when the mesentery was tied. As a result of these chance observations he determined to investigate the matter systematically.

The animals used were dogs and rabbits. Most of the experiments were conducted under morphia narcosis. Half an hour before the operation 1 c.cm. of a 4 per cent solution of morphia was injected subcutaneously, with the result that although the animal slept quietly it reacted at once to any irritative stimulation. Other methods of narcosis he did not favour. Under light ether anæsthesia the abdomen can be easily opened and the viscera partially delivered, but in a few minutes the animal is fully conscious, and much too restless to permit of careful and accurate observations being made; or, on the other hand, consciousness may take much longer to return, and not uncommonly the animal, although apparently fully conscious, showed no sensibility in either visceral or parietal peritoneum. Thus, ether anæsthesia is condemned as being too uncertain.

The abdomen having been rapidly opened and a loop of bowel drawn out, the animal should be allowed to settle down again to sleep. After a few minutes, if this loop of bowel be pinched between the fingers, or picked up by a pair of sharp forceps, the animal at once cries out and lifts its head, trying to change its position. The same thing takes place if the bowel wall is cut into with a knife, or pierced by a needle, or struck lightly with a blunt instrument. Great care must be taken that the mesentery is not torn or pulled on during the experiments, as this in itself causes acute pain.

After the loop of bowel has been exposed to the air for some time and has become dried, its sensitiveness is to a large extent lost, although a reaction can always be got to strong stimulation. If the bowel be lightly touched with a blunt needle there is no evidence of sensation. It is difficult to account for this, unless it be that the stimulation caused by a blunt needle is less than that of the cold air to which the bowel is exposed. On the other hand, the application of the thermo-cautery to the bowel wall causes intense pain.

In regard to the reposition of the bowel into the abdominal cavity, this is usually accompanied by pain, even although the parietal peritoneum is not touched, but it is possible, if great care is taken not to pinch the bowel wall, to replace small loops very slowly with very little disturbance. An electric current when applied to the bowel wall causes acute pain.

The above results apply equally to the large bowel, the appendix, the stomach, as also to the spleen, liver, and pancreas. It is extremely doubtful if the visceral peritoneum is *of itself* sensitive. The mesentery can be punctured and cut, in the spaces between the vessels and nerves, painlessly.

From the above observations Ritter concludes that there can be no doubt about the sensitiveness of the normal abdominal viscera, but he proceeds to convince the sceptic by experiments on the mesentery of the small bowel. It had already been noticed that any handling of the mesentery, and interference with it, especially in the vicinity of the vessels, caused acute pain. If now a loop of bowel be gently laid on gauze, great care being taken not to pull in the mesentery, and the vessels and accompanying nerves be isolated near the gut, two ligatures are passed round one set of vessels and nerves, one being near the bowel (peripheral) and one about 3 cm. from it (proximal). If the proximal ligature be tied (without pulling on the mesentery) pain is at once caused, the animal calls out loudly, turns its head towards the side operated on, and struggles violently. This result happens no matter how long exposed the loop of bowel has been to the air. If, now, the peripheral ligature is tightened there is no evidence of pain, because the nerve path has been interrupted. On the other hand, if the peripheral ligature is first tied pain is caused, which is again shown on subsequently tightening the proximal one. (The fact that there was no pain on tying the peripheral after the proximal one shows that the prevention of drawing and pulling on the mesentery can quite easily be accomplished and that possible error eliminated.)

The same experiments were carried out with the mesentery of the large bowel, and the vessels of the spleen, stomach, &c. Great pain was got on tying a tag of the omentum.

Ritter having conclusively established the presence of sensitiveness in the viscera, next goes on to investigate the effect on this of local anæsthetics, *e.g.*, cocain, with a view to clearing up the mistakes of previous observers.

He used a 0·1 per cent solution of cocain, which was injected subcutaneously and intramuscularly, allowing a painless laparotomy to be performed. At first the viscera showed normal sensitiveness, but this very soon disappeared, and was completely absent after ten minutes. Even ligation of the mesenteric vessels caused no pain. No pain could be caused by pulling or tearing of the parietal peritoneum, or pulling on the mesentery, or maltreating the bowel, or ligation of mesentery or omentum, or even by replacing the abdominal contents. This action of the cocain was not local, as all the viscera showed the same phenomena. In order to show how quickly cocain is absorbed and distributed, Ritter opened a dog's abdomen (without cocain); pulling out a loop of bowel he swabbed it with cocain, and in the course of a few minutes found loss of sensitiveness in it. This loop was then replaced and another one drawn out. This latter one was then found to be insensitive, although no cocain had been applied to it.

In order to determine the exact route of the nerve impulses from bowel to brain Ritter cut through the spinal cord in several animals, and then tested the visceral sensitiveness. He found that the visceral sensitiveness was undisturbed by section of the cord below the eighth or ninth vertebra, but if the cord was cut at or above this level there was complete loss of sensitiveness in the viscera. Thus, one concludes that the nerve impulses passed *via* the sympathetic nerves to the sensory columns of the cord.

It must, of course, be proved that what was found here in animals applies also to human beings. Observations had been made previously on anæsthetised persons, and on loops of bowel exposed to the air (as in colotomies) for from twelve to twenty-four hours, but these were not trustworthy. A few satisfactory and conclusive observations have, however, been made. For example, Bier found that ligation of the mesentery caused great pain in a patient who had no anæsthetic, and Ritter himself has seen all the observations he made in animals demonstrated in man.—ROBERT B. CARSLAW.

DISEASES OF CHILDREN.

Henoch's Purpura and Intussusception. By Hugh Lett, M.B., F.R.C.S. (*The British Journal of Children's Diseases*, August, 1908).—The case reported was that of a child, aged 3 years, who was taken ill with pain in the left leg and swelling of left knee immediately after a bath. Next day the left elbow and left ankle became swollen, and "some purple blisters" appeared on the left leg. The same day he suffered from severe abdominal pain, and blood and mucus were passed *per anum*. On the following day small purpuric patches were present on ears, legs, and scrotum, and abdominal palpation revealed a sausage-shaped tumour in the right lumbar region; no mass was felt *per rectum*. Laparotomy was performed the same day, and an ileo-cæcal intussusception was reduced. Subsequent to the operation the abdominal symptoms subsided, but the purpura became more marked and blebs began to form. Six days after the operation patient again complained of abdominal pain, and vomited frequently. Thereafter the purpura steadily increased in severity, the hands becoming swollen and gangrenous as also the laparotomy wound, and he died nine days after the date of operation, or twelve days from the commencement of the illness. *Post-mortem* examination disclosed septic peritonitis, and an irreducible enteric intussusception, 5 inches in length, and situated 18 inches from the ileo-cæcal valve.

The author comments upon the similarity of the symptomatology of "Henoch's purpura" and "intussusception," and on the fact that the latter has been mistaken for purpura, the truth only being revealed *post-mortem*, and that a laparotomy has been performed for supposed intussusception only to discover a purpuric hæmorrhage into the mesentery or intestine. Moreover, as this case and other records show, the two conditions may exist in the one patient, although, as a rule, they occur at different periods of childhood.

According to the author, the important distinguishing feature is the presence of an abdominal tumour, which has an elongated sausage shape, which is slightly curved by the drag of the mesentery, which contracts and becomes more marked on palpation, and which can be partially reduced by manipulation through the abdominal wall. Hæmorrhage into the mesentery and intestine will, of course, give rise to an abdominal tumour, but not having the above-mentioned characters.—LEONARD FINDLAY.

A Contribution to the Study of the Milk of the Mother as a Source of Tuberculosis. By Mathilde de Biehler (*Archives de Médecine des Enfants*, July, 1908).—This author has examined the milk of six suckling women, suffering from tuberculosis of the lung, with reference to the presence of the tubercle bacillus. All the women presented evidence of active pulmonary tuberculosis, and the sputum in all cases contained tubercle bacilli. The milk was drawn off with aseptic precautions, and quantities varying in amount, between 1 c.c. and 10 c.c., were injected into the peritoneal cavity of a guinea-pig. In all cases the animals continued in good health and to put on weight, and, when killed six weeks after the injection, presented absolutely no evidence of tuberculosis. The author concludes that the mother's milk cannot, therefore, as a rule, be looked upon as a source of infection. A similar research, conducted by Fuster, and which also gave negative results, is referred to.—LEONARD FINDLAY.

Juvenile Tabes and General Paralysis from Acquired Syphilis. By MM. E. Apert, Lévy-Fraenkel, and Ménard (*Archives de Médecine des Enfants*, July, 1908).—The case reported is that of a young girl, aged 15 years.

Family history.—Her father died in 1906 from tabes and general paralysis; he had contracted syphilis in 1894. Her mother is living. She contracted syphilis from her husband in 1894, and ultimately developed the following signs of tabes:—Loss of knee-jerks, Romberg's sign, Argyll Robertson pupils, and almost total blindness of left eye. She has an elder brother alive and well.

Patient was born at full term, and enjoyed good health until 1894, being then 2½ years old, when she contracted syphilis from her parents. She became anæmic and emaciated, suffered from dysuria, and shortly afterwards developed a typical secondary syphilitic eruption. She was treated with Hg for only three months, and from then until 1906 had no antisyphilitic treatment, although she suffered from frequent attacks of headache and vomiting.

In 1906 (when she first came under observation) she was suffering from one of these attacks of headache and vomiting, more severe, however, than usual; she was slightly fevered, and lapsed into a state of coma. This attack continued for several days. On her recovery it was noticed that her nature had changed to that of a domineering, obstinate, and wicked child.

In July, 1907, she was taken suddenly ill with generalised epileptiform convulsions, and in that condition was admitted to hospital. Conjugate deviation of head and eyes, nystagmus, Babinski's sign in both feet, and Romberg's sign were also noted at this date. On day following admission, convulsions had ceased and given place to general rigidity. Sensation was normal. Lumbar puncture revealed a clear cerebro-spinal fluid containing many lymphocytes. She again lapsed into coma, but after a time she gradually regained consciousness.

Later, her condition is reported as follows:—Physical development good; no paralysis; gait normal; Romberg's sign present. Eyes: inequality of pupils, Argyll Robertson's phenomenon present in both eyes, slight irido-choroiditis. Sensation normal. Knee, Achilles tendon, and triceps-jerks, all absent. Speech normal; fibrillary tremor of tongue. Reads and writes well. Occasional slight headache. Mentally very obstinate, and liable to fits of temper, subject to slight hallucinations, but absolutely no grandiose ideas.

The authors consider the case one of tabes terminating with general paralysis. They found this diagnosis on the presence of tabetic signs accompanied by epileptiform convulsions and coma, mental change, and the fact that there was absolutely no response to antisyphilic treatment, which latter point makes it not improbable that the cerebral symptoms were not tertiary but parasyphilitic in nature.

In conclusion, they quote the following cases:—(1) One reported by Gianelli, where the mother of a general paralytic infant suffered from tabes and general paralysis; (2) the case of a child, aged 13 years, suffering from general paralysis and having a general paralytic father and tabetic mother, is reported by Kutner; (3) the case of a tabetic child of 15 years, whose father died of tabes, is reported by Brusch; (4) Babinski records a case of a tabetic child, whose father was also tabetic; (5) Linser reports the case of a tabetic child of 15 years, whose father died of general paralysis; (6) Cautonnet records the case of a tabetic child of 15 years, whose mother was tabetic.—LEONARD FINDLAY.

DISEASES OF THE EAR.

The Simulation of Mastoid Disease by Furuncle of the External Meatus and Periauricular Abscess. By H. Gradle, M.D. (*The Laryngoscope*, August, 1908).—In exceptional instances a small boil of the external meatus does not project above the surface, and if at the same time there is much pain and swelling over the mastoid process a diagnostic error may occur. The resemblance to disease of the mastoid process is even greater in certain cases of periauricular abscess. The following observations illustrate some of the diagnostic difficulties:—

Case I.—A healthy labouring man complained of dull pain behind the right ear, with increasing swelling, of three days' duration. There was no history of previous ear disease. The hearing was dulled, the ear felt stuffy, there was great tenderness over the swollen region, but no headache. The auricle stood at nearly a right angle to the side of the face, the mastoid region was very œdematous, but only moderately reddened, and the retroauricular groove was effaced. The meatus was somewhat narrowed by diffuse swelling, principally of the posterior wall, without redness. The drumhead was pale and normal. The general health was not much disturbed, tongue slightly coated; temperature, 101°. Subperiosteal abscess, perforating mastoid empyema, and osteomyelitis were considered, but excluded by the history, the absence of intense local pain, and the relatively slight constitutional disturbance. The following day spontaneous opening through the posterior wall of the meatus was found to have occurred, with free discharge of pus, and complete recovery took place in three days.

Case II.—Female, aged 35, a deaf-mute, had the left upper canine removed on account of toothache. One or two days later pain began in the left side of the face, extending into, beneath, and behind the ear. Pain increased in severity for a week, when she was first seen by the writer. It was not continuous, however, but remitted irregularly, and was sometimes nearly absent for a short time. There was headache, worse on the left side. Temperature, 99½° to 100° F. The tongue was heavily coated and the breath offensive. Pyorrhœa alveolaris, presumably of long standing, was present, but nothing abnormal was found in the socket of the extracted tooth. There was no swelling around or behind the ear, but excessive tenderness over the entire mastoid region as well as underneath the meatus. The sensitiveness extended beyond the mastoid to the occipital bone, and, anteriorly, beyond the auricle. Percussing over the bone for several centimetres above and behind the ear gave rise to decided pain. The meatus was not narrowed. About the middle of the postero-inferior wall the tenderness to touch was most pronounced. The puckered and clouded drumhead was pale. Pus was seen in the middle meatus of the left nostril, and the left cheek was dull on transillumination. Next day it was found that a furuncle on the posterior wall of the meatus had opened. The discharge ceased in four days, and the temperature became normal, and by the end of a week the pain and tenderness had also quite disappeared.

Case III.—Male, aged 30, has had discharge from the right ear at intervals since infancy. Drumhead and ossicles are entirely absent. For a number of months discharge had been present, and for a few days there had been increasing pain around the right ear. The walls of the meatus were swollen, so that no view of the interior could be obtained. There was scant purulent discharge with slight fœtor, and œdema with very little redness over the mastoid region. The patient, an extreme neurasthenic, complained of intense tenderness all around the ear. Temperature, 100° to 101°. Wilde's incision was made on the fourth day, but no pus was found. Three days later another incision was made, but without reaching pus. Pain, distress, and temperature had all increased—the last up to 103°. Two days later the abscess opened itself at the external end of the anterior wall of the meatus, internal to the tragus; this was enlarged, and after ten days had closed. Later, another abscess pointed over the ramus of the jaw below the meatus, and was incised. Two injections of staphylococcus vaccine were given during the course of the attack.

CASE IV.—Male, aged 72, with albuminuria, was suddenly seized with pain in the left ear, which, the following day, shifted more towards the side of the neck and the mastoid region. It was not intense, but was accompanied by left-sided headache. The third day the patient became drowsy. Temperature, 102° to 103°; pulse, fast and weak. There was a phlegmonous swelling from the region of the parotid gland, extending down the side of the neck a few centimetres below the tip of the mastoid, effacing the retroauricular groove. The lateral surface over the mastoid was normal, but tender to touch. The meatus was absolutely closed by swelling. The left tonsil, pushed inward towards the median line, was pale, but surrounded by œdema. Wilde's incision the following day gave exit to a quantity of pus. There being no improvement, a fuller exploration was made next day. There was now an enormous flow of pus from the meatus, which was traced to a sinus in the lower wall leading to an abscess beneath. This was opened freely and packed. The patient died the following morning. The autopsy showed that the abscess had originated external to the tonsil, and had penetrated toward and behind the ramus of the jaw. The mastoid, its antrum, and the middle ear were found healthy.—WILLIAM WALLS CHRISTIE.

Ménière's Disease. By M. Lannois and F. Chavanne (*Revue Hebdomadaire de Laryngologie, d'Otologie, et de Rhinologie*, 16th May, 1908).—This paper is based on a report presented by these observers to the French Oto-Rhino-Laryngological Society in May of this year, and describes in an exhaustive manner the various conditions to which the name Ménière's disease has been loosely applied. From the clinical point of view they recognise seven principal forms—apoplectiform, acute paroxysmal, chronic with paroxysms, continued, attenuated, indefinite, psychical. The apoplectiform may or may not be due to an injury, and it is only the non-traumatic form to which the name Ménière's disease can historically be properly applied. Such was the subject of Ménière's original communication in 1861. It is much the most rare form of those various conditions which show more or less clearly the triad of symptoms known as Ménière's symptoms—vertigo, tinnitus, deafness. It is due to a labyrinthine hæmorrhage, may arise in connection with some general pathological state—leukæmia, syphilis, nephritis, &c.—or quite apart from any of these, and it may be ushered in by premonitory symptoms, such as giddiness or tinnitus, or these may be absent and the attack occur quite suddenly. Some authorities state that consciousness is always maintained, and that if unconsciousness does occur it is due to injury from a fall owing to the severe vertigo. This, however, is not the opinion of many who hold that the attack itself may lead to unconsciousness. (It may be remarked here that Ménière's historic case terminated fatally on the fifth day, and at the *post-mortem* examination no cause of death could be found other than the hæmorrhage into the internal ear.) The resulting vertigo takes various severe aspects, and other symptoms, subjective and objective, noticed are severe tinnitus, facial pallor, expression of anguish, cold perspiration, dimness of vision and other visual phenomena, severe vomiting. Momentary loss of speech has been observed, and, in rare instances, facial paralysis, and, more rarely still, paralysis of some other cranial nerve. The duration of the attack varies from some minutes to several days. Usually it is only after the initial intensity of the attack has passed off that the deafness is noticed. As a rule, this is complete and permanent. In more than half the reported cases both ears were affected and at the same attack.

Such, then, is the description of an attack to which the name of the first observer has been given, but since that time the name, Ménière's disease, has been extended to include a large variety of conditions, in which the cardinal symptoms have been found in all sorts of variations as to intensity, mode of appearance, duration, and so on. The names given to the different forms by Lannois and Chavanne to a certain extent describes them. For instance, in the acute paroxysmal form, the attacks recur suddenly, while in the interval the patient is free from vertigo, tinnitus, or deafness. In the chronic paroxysmal variety the opposite is the case. The continued is the most distressing form, and may be so severe as to completely incapacitate the person affected. The attenuated form is the most common, and, because the ears are not examined, is frequently ascribed to affections of the stomach, kidney, uterus, &c. The indefinite form has not even the same right as the others to be included, as in it one or other of the three symptoms may be absent. The psychical form may occur in hysteria, or it may be the precursor of insanity.

The authors describe carefully the methods of examining patients as to vertigo and its direction, both as a subjective and as an objective phenomenon.

As regards prognosis, this depends to a great extent on the severity of the phenomena. Where the vertigo is severe, its disappearance takes place only after a long time, years it may be, and then only by complete disorganisation of the labyrinth and with total loss of hearing in the affected ear. In milder cases, even in those due to labyrinthine hæmorrhage, if this is very small in amount, a more or less complete cure may result.

The discussion which followed this communication turned chiefly on the nomenclature. Trétrôp would give the title Ménière's disease to cases due to actual labyrinthine affections, whatever the pathological foundation, but would exclude those where the aural affection was in the middle ear. Moure would only include those labyrinthine affections due to hæmorrhage or thrombus. At the same time it should be recognised that the labyrinth may not be affected in its entirety, and the symptoms would vary according as the vestibule, the cochlea, or one of the semicircular canals was alone affected. As to the diagnosis of these localisations Moure had much to say, and spoke favourably of the tests instituted by Barany, which had been used in his clinic with helpful results. Lermoyez pleaded for the abolition of the name Ménière's disease, as far as otologists are concerned, as the study of the exact pathological states was impeded by its retention, and this is particularly important to-day when the attention of aurists is being focussed on affections of the internal ear, and also in view of the fact that at the International Congress at Budapest next year the whole subject of otological terminology is to be reviewed.—W. S. SYME.

Books, Pamphlets, &c., Received.

The Natural History of Cancer, with special reference to its Causation and Prevention, by W. Roger Williams, F.R.C.S. London: William Heinemann. 1908. (21s. net.)

Contributions to the Physiological Theory of Tuberculosis, by Charles Creighton, M.D. With 64 illustrations in the text. London: Williams & Norgate. 1908. (12s. 6d. net.)

County Council of Lanark: Seventeenth Annual Report of the County and District Medical Officer. 1907. Glasgow: Robert Anderson. 1908.

A Synopsis of Surgery, by Ernest W. Hey Groves, M.S., M.D., B.Sc. Lond., F.R.C.S.Eng. Bristol: John Wright & Sons, Ltd. 1908. (7s. 6d. net.)

Common Affections of the Liver, by W. Hale White, M.D., F.R.C.P. London: James Nisbet & Co., Limited. 1908. (4s. 6d. net.)

The Sexual Life of our Time in its relations to Modern Civilization, by Iwan Bloch, M.D. Translated from the sixth German edition by M. Eden Paul, M.D. London: Rebman Limited. 1908. (21s. net.)

A Dictionary of Medical Treatment for Students and Junior Practitioners, by Arthur Latham, M.A., M.D. Oxon., M.A. Cantab., F.R.C.P. Lond. London: J. & A. Churchill. 1908. (6s. 6d. net.)

Neurasthenia, by Gilbert Ballet. Translated from the third French edition by P. Campbell Smith, M.D. Illustrated with 7 figures. London: Henry Kimpton. 1908. (6s. net.)

Quain's Elements of Anatomy. In four volumes. Vol. III: Neurology, by E. A. Schäfer and J. Symington. Part I: Containing the General Structure of the Nervous System and the Structure of the Brain and Spinal Cord. With numerous illustrations, many of which are coloured. Eleventh edition. London: Longmans, Green & Co. 1908. (15s. net.)

Therapeutics of the Circulation (Eight Lectures delivered in the Spring of 1905 in the Physiological Laboratory of the University of London), by Sir Lauder Brunton, Bt., M.D., D.Sc., LL.D. Edin., LL.D. Aberd., F.R.C.P., F.R.S. London: John Murray. 1908. (7s. 6d. net.)

Fads and Feeding, by C. Stanford Read, M.B. Lond., M.R.C.S., L.R.C.P. London: Methuen & Co. 1908. (2s. 6d. net.)

The Principles of Hygiene as applied to Tropical and Sub-Tropical Climates, and the Principles of Personal Hygiene in them as applied to Europeans, by W. J. R. Simpson, M.D,, F.R.C.P., D.P.H. London: John Bale, Sons & Danielsson, Ltd. 1908. (15s. net.)

An Analytical Index of Volumes I to X of the Medical Review, and a Digest of the Facts important to the Practitioner in the Medical Periodicals of the World, 1898-1907. London: The Medical Review. 1908. (7s. 6d net.)

A Manual of Surgery for Students and Practitioners, by William Rose, M.B., B.S. Lond., F.R.C.S., and Albert Carless, M.S. Lond., F.R.C.S. Seventh edition. London: Baillière, Tindall & Cox. 1908. (21s. net.)

A Manual of Natural Therapy, by Thomas D. Luke, M.D., F.R.C.S. Edin. With 30 plates and 125 illustrations, many of which are original. Bristol: John Wright & Sons, Ltd. 1908. (7s. 6d. net.)

A System of Medicine by Many Writers, edited by Sir Clifford Allbutt, K.C.B., M.A., M.D., LL.D., and Humphry Davy Rolleston, M.A., M.D., F.R.C.P. Vol. IV, Part I. London: Macmillan & Co., Ltd. 1908. (24s. net.)

Tuberculosis in Infancy and Childhood, its Pathology, Prevention, and Treatment, by Many Writers, edited by T. N. Kelynack, M.D. London: Baillière, Tindall & Cox. 1908. (12s. 6d. net.)

International Clinics, a Quarterly of Illustrated Lectures and especially prepared Original Articles, edited by W. T. Longcope, M.D. Vol. III (Eighteenth Series), 1908. London: J. B. Lippincott Company. 1908.

The Student's Handbook of Physiology, by the late Arthur Clarkson, M.B., C.M. Ed., and David A. Farquharson, M.B., C.M. Ed., F.F.P. & S. Glas. Edinburgh: E. & S. Livingstone. 1908. (12s. net.)

Fourth Annual Report of the Henry Phipps Institute for the Study, Treatment, and Prevention of Tuberculosis. Edited by Joseph Walsh, A.M., M.D. Philadelphia: Published by the Henry Phipps Institute. 1908.

The Practical Medicine Series, under the general editorial charge of Gustavus P. Head, M.D. Vol. IV: Gynecology, edited by Emelius C. Dudley, A.M., M.D., and C. von Bachellé, M.S., M.D. Vol. V: Obstetrics, edited by Joseph B. de Lee, A.M., M.D., with the collaboration of Herbert M. Stowe, M.D. Vol. VI: General Medicine, edited by Frank Billings, M.S., M.D., and J. H. Salisbury, M.D. Chicago: The Year Book Publishers. (Glasgow: G. Gillies & Co.) 1908.

Gynecology and Abdominal Surgery, edited by Howard A. Kelly, M.D., F.R.C.S. Hon. Edin., and Charles P. Noble, M.D., S.D. Illustrated by Hermann Becker, Max Brödel, and Others. Vol. II. London: W. B. Saunders Company. 1908. (Cloth, 35s. net.)

Diseases of the Skin and the Eruptive Fevers, by Jay Frank Schamberg, A.B., M.D. Fully illustrated. London: W. B. Saunders Company. 1908. (13s. net.)

GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR THE FOUR WEEKS ENDING 17TH OCTOBER, 1908.

	Week ending			
	Sept. 26.	Oct. 3.	Oct. 10.	Oct. 17.
Mean temperature,	56·6°	62·6°	58·1°	56·6°
Mean range of temperature between day and night,	13·2°	29·7°	21·5°	22·6°
Number of days on which rain fell,	7	2	5	0
Amount of rainfall, ins.	0·65	0·21	0·28	0·00
Deaths registered,	232	231	230	227
Death-rates,	14·1	14·0	14·0	13·8
Zymotic death-rates,	1·1	1·1	0·9	1·0
Pulmonary death-rates,	2·7	2·8	3·3	3·2
Deaths—				
Under 1 year,	71	53	60	58
60 years and upwards,	44	52	45	45
Deaths from—				
Small-pox,	...	...	...	...
Measles,	...	...	...	1
Scarlet fever,	1	...	1	1
Diphtheria,	5	2	6	3
Whooping-cough,	8	11	6	11
Fever,	2	2	1	...
Cerebro-spinal fever,	2	3	2	1
Diarrhœa,	14	13	19	18
Croup and laryngitis,	...	...	1	...
Bronchitis, pneumonia, and pleurisy,	29	33	33	38
Cases reported—				
Small-pox,	...	...	...	...
Cerebro-spinal meningitis,	...	6	2	3
Diphtheria and membranous croup,	15	41	45	37
Erysipelas,	15	18	16	20
Scarlet fever,	50	113	73	94
Typhus fever,	2	...	...	...
Enteric fever,	11	7	10	9
Continued fever,	...	1	1	...
Puerperal fever,	3	5	1	2
Measles,*	10	20	24	19

* Measles not notifiable.

Sanitary Chambers,
Glasgow, *22nd October, 1908.*

THE

GLASGOW MEDICAL JOURNAL.

No. VI. December, 1908.

ORIGINAL ARTICLES.

TRAUMATIC RUPTURE OF SMALL INTESTINE.[1]

By GEO. H. EDINGTON, M.D.,

Professor of Surgery, Anderson's College Medical School; Assistant Surgeon, Western Infirmary; Extra Honorary Surgeon, Royal Hospital for Sick Children, Glasgow.

In injuries of the abdomen, whether contusions or wounds, it is a matter of the first importance to determine whether a visceral lesion exists. Of such lesions, rupture of intestine is one of by no means infrequent occurrence, and it is a case of this kind which forms the subject of the present communication. The patient came under my care during this summer, while I was taking charge of Sir Hector Cameron's wards, and I have to thank Sir Hector for his kind permission to publish the following particulars:—

George W., aged 12, was admitted to the Western Infirmary, Ward XXX, at 7 P.M. on 1st August, 1908, with a history of having been jammed, about six hours previously, between a barrow and a lamppost.

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[1] A communication made to the Medico-Chirurgical Society of Glasgow on 16th October, 1908.

At the time of the accident the patient, who was acting as a grocer's message-boy, was going down a steep street, drawing a two-wheeled barrow behind him. Owing to the steepness of the incline, he lost control of the barrow, and proceeded down the street at a run. He was unable to check himself, and collided against a lamppost at the side of the street. He was nipped between the lamppost and the barrow, his abdomen, which was thrust forward in his attempts to stop, receiving the brunt of the impact against the lamppost. He fell, and immediately vomited. He was then carried into a neighbouring house, where he was placed on a sofa, and a doctor was summoned. No sign of visceral lesion was observed, and the doctor applied a bandage round the abdomen. The boy lay on the sofa for five a half hours. During this time he suffered severe pain in the abdomen, and vomited three or four times, the vomited matter being greenish and watery. The pain was generalised. He was then seen again by the doctor, who recognised that the injury was serious, and sent him into hospital.

Previous history.—The boy had always enjoyed good health. On the day of the accident he had had no food since his breakfast at 8 A.M., five hours before the accident.

State on admission.—He was suffering from shock, and, in answer to questions, stated that he had pain all over the abdomen. He did not complain of the pain being severe. The abdomen was slightly distended, and there were marks of bruising in the form of slight subcutaneous extravasation of blood in the lower part of the anterior parietes. The area of bruising was to the left of the pubes, and extended downwards over the femoral vessels and upwards across the iliac fossa; altogether, it was about the size of an outstretched hand. There was considerable tenderness over the abdomen, and the liver dulness was obscured. There was no dulness in the flanks to suggest hæmorrhage into the peritoneal cavity. Some bilious matter was vomited shortly after admission. I did not consider that there was any indication for operation, and told the house surgeon to report if the patient became restless.

Almost immediately after I had left the hospital restlessness set in, and continued till I saw him again, about 11·30 P.M. By this time the abdominal wall had become board-like, and I diagnosed rupture of viscus, probably of small intestine, and proceeded to open the abdomen.

The situation of the bruised area of the abdominal wall suggested that the violence might have fallen on the bladder, but a catheter, which was passed before commencing the operation, drew off several ounces of clear urine. The abdomen was opened in the middle line, below the umbilicus. The intestines were not distended more than normally, but were slightly reddened. A large quantity of brownish, bloody fluid was found in the recto-vesical pouch. It had no fæcal odour. A short search discovered a loop of small intestine, almost completely torn across, situated in front of the vertebral column. The two orifices, somewhat narrowed, were directed forwards and lay side by side, resembling, in appearance, the muzzle of a double-barrelled gun (Fig. 1).

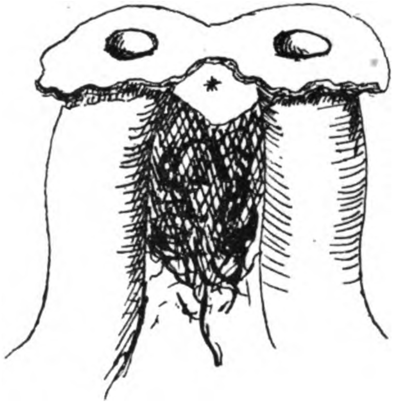

FIG. 1.

Diagram showing configuration of rupture. The torn ends of the bowel are represented further apart than was actually the case. *, tear in mesentery, and, below, ecchymotic area is shown shaded.

The torn mucous membrane was everted all round, save at the mesenteric border, where a narrow bridge (about 1 cm. broad) connected the two pieces of bowel. On the distal portion of bowel the serous coat was retracted for about 1 inch. The mesentery belonging to the injured loop of bowel showed marked extravasation of blood between its layers. Its attachment to the bowel was torn through at the site of the rupture, so that a space existed between it and the above-mentioned bridge of mucous membrane, and the latter was apparently the sole bond of union between the two pieces of bowel. There was no suggestion of rupture higher up, and a systematic inspection of the bowel from the ileo-cæcal junction up to the site of injury showed it to be intact. The rupture had occurred about 80 inches (2·04 m.) above the ileo-cæcal junction.

The division of the bowel was completed by scissors, the two ends were turned in and fixed by purse-string sutures, and lateral anastomosis, about 1 inch (3 cm.) from the blind ends, was performed with two layers of sutures. The blind ends were tacked together by a few stitches to assist in supporting the anastomosis sutures. A wide tube was introduced into the recto-vesical space, through the lower angle of the laparotomy wound, and the abdomen was douched with sterile saline. The laparotomy wound was closed in layers, except where the tube emerged.

He was placed in the Fowler position, and had saline injections *per rectum*. On the third day albumen water was given by the mouth. This was followed by milk, and milk pudding, and the diet was gradually increased. The drainage-tube was shortened daily, and removed on the eighth day, a smaller one being substituted. This was dispensed with on the twelfth day, when the skin stitches were removed.

The patient's recovery was uninterrupted. He left the hospital on 14th September, quite well, and has continued so, with the exception of a vague complaint of, on one occasion, some pain in the upper part of the abdomen. He has a regular daily movement of the bowels.

REMARKS.

With regard to the *diagnosis* in this case, we had the history of sudden and severe violence acting on the abdomen, the patient's body being nipped between two external objects. The accident was followed by shock, vomiting, abdominal pain and tenderness, slight distension, and slight impairment of the liver note. In addition, there was the bruised area in the lower part of the abdomen. These symptoms and appearances pointed to the probability of rupture of intestine having occurred. The symptom on which I placed most weight, however, appeared shortly after admission: I refer to restlessness. This is mentioned by Treves[1] as being usually present, and to a marked degree, in cases of rupture of viscera; and my attention had been drawn to it in connection with a case of rupture of the small intestine which I had an opportunity of observing, also in Sir Hector Cameron's wards, some nine or ten years ago. Bearing this in mind,

[1] *System of Surgery*, 1896, vol. ii, pp. 561, 567.

the occurrence of great restlessness in the present case determined me to operate, and this decision was strengthened by the coming on of rigidity of the abdominal wall. I have already referred to the question of rupture of the urinary bladder, and the steps which I took to exclude it.

I wish now to refer to the *site of the rupture.* In this case it corresponds with what is shown in statistics. viz., that in the vast majority of cases it is the small intestine which suffers. The exposed situation of the lesser bowel renders it specially liable to be injured by external violence, the bowel being crushed between the external force in front and the unyielding vertebral column behind. The large intestine, lying, as it does, well back in the flanks or protected by the pelvis, is comparatively rarely injured. Treves, in the article already referred to,[1] states that the jejunum is the part of the bowel which is most often the seat of rupture. In a paper[2] recently read before the Royal Society of Medicine, Messrs. James Berry and P. L. Giuseppi furnish an analysis of the 132 cases which have occurred in ten London hospitals during the last fifteen years. Their figures regarding the situations of the ruptures are very interesting. They found that in 132 cases rupture occurred in the large intestine alone in 10, in the small intestine in 115 (duodenum 23, duodeno-jejunal flexure 3, jejunum 32, ileum 32, small intestine 25), in large and small intestine in 4, partial rupture of duodenum in 1, and of the large intestine in 2.

Unless one is dealing with the upper part of the jejunum or the lower part of the ileum, it is difficult at an operation to draw a hard and fast line between these two portions of the small intestine. The nearest approach which I felt justified in making was in roughly measuring the distance of the seat of rupture above the ileo-cæcal junction. This was approximately 80 inches (2·04 m.), and the rupture may be said to have occurred *at the upper part of the ileum or lower part of the jejunum.*

Coming to the *configuration of the rupture*, we find that it was transverse, and was situated on the summit of a loop; and I think we may justly look upon it as being practically complete. It is true that a small portion of the bowel-wall was untorn. This bridge consisted of at least mucous membrane. I am unable to speak regarding the muscular coat at this part, but the corresponding mesentery was plainly torn. We have here, therefore, the peritoneal coat of the bowel showing the greatest degree of tearing. This I shall refer to immediately. The position of the upper and lower lips of the loop, viz., in the same plane, is worthy of note. That this would seem to be in one way a conservative provision is borne out by what happened in the former case, already mentioned. In that case three days had elapsed since the accident, and there was slight distension and tympanites. On opening the abdomen the bowels were found to be congested, and there were some adhesions to the left of the middle line. On pulling these apart, a small abscess was found, and close beside it was the ruptured bowel. The rupture was transverse, and extended right back to the mesentery. The torn ends of the bowel were plastered against the mesentery of a neighbouring loop, and in this way the lumen of the gut was shut off from the general peritoneal cavity. In the case shown to-night, the operation was performed so shortly after the occurrence of the accident that adhesions had not had time to form. The narrowing of the orifices of the torn bowel was due partly to prolapsed mucosa, but may also have been produced partly by contraction of the muscular coat.

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[1] *Loc. cit.*, p. 566.

[2] *Lancet*, 1908, vol. ii, p. 1144 *et seq.*

This case presents another point to which I wish to draw attention, viz., the *contusion* and *laceration of the mesentery.* The extent of the injury to this structure left me in doubt as to the vitality of the bowel at and in the immediate neighbourhood of the rupture, and put out of court the idea of performing end-to-end suture. Even if the mesentery had been uninjured I should have hesitated to carry out this method, partly on account of the necessity which would have arisen of resecting portions of the torn ends, and partly because of the likelihood of subsequent stricture. In order to avoid, or, at anyrate, to lessen any risk either of leakage or of stricture I determined to perform lateral anastomosis through apparently healthy bowel. This was done after the torn ends had been well turned in and fixed by a purse-string suture.

As regards the *nature of the violence*, I think we may assume that at the time of the accident the abdominal muscles were in a state of relaxation, in which circumstance the sudden impact would tell severely on the viscera. There was in this patient, however, a reversal of the usual conditions, inasmuch as the abdominal wall struck an external fixed object, and the vertebral column was propelled against this stationary object by the impact of the after-coming barrow. It was thus the comparatively narrow vertebral column which was the *active* agent in the production of the bowel lesion, while the *passive* agent—the lamppost—was of a size sufficient to cover a large area of the abdominal wall. These circumstances explain the localised character of the lesion. That the *direction of the violence* was not antero-posterior but rather *oblique* is shown by the situation of the extravasation of blood into the tissues of the abdominal wall. The obliquity, represented diagrammatically in Fig. 2, has been of such a degree as to bring the violence within the category of "coups dangereux" (Dambrin[1]). The extravasation does not, I think, prove rigidity of the abdominal wall at the time of impact, but has resulted from contusion of the soft tissues over the upper ramus of the left os pubis.

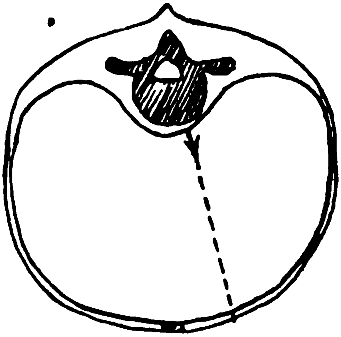

FIG. 2 (*after Dambrin*).

The arrow and dotted line show the oblique direction in which the vertebral column travelled. The line reaches the anterior parietes at a spot directly above the contused area.

In a case such as the above, the *condition of the bowel at the time of the accident* is of importance. When it is remembered that five hours had elapsed between the last meal and the occurrence of the accident, it will be seen to be unlikely that the jejunum, even at its lower end, would have contents of any considerable volume. (Hertz[2] finds that the stomach contains a "remnant" of food four and a half hours after a meal.) Assuming the *comparative emptiness* of the bowel, we must consider the circumstance as an important factor in the happy termination of the case.

[1] *Revue de Chirurgie*, 1904, vol. xxix, p. 462.

[2] See paper on "The Passage of Food through the Human Alimentary Canal," *British Medical Journal*, January, 1908.

The rupture was most probably produced by *crushing.* This method of production is usually recognised as being the commonest. At the same time, the complete and extensive rupture of the peritoneum, along with the incomplete lesion of the mucosa, is the condition which Dambrin[1] found experimentally resulted from rupture *par éclatement.* Rupture by this method, however, postulates a distended bowel, with violence applied to it at some distance from actual seat of rupture.

CONCLUSION.

Taking the above circumstances into account, we may look on the present case as one in which traumatic rupture of the small intestine has occurred by crushing, the active agent being the vertebral column. The clinical signs were, on the whole, clear. The bowel was probably empty at the time of the accident, and to this, as well as to early operation, may be ascribed the fortunate conclusion.

GASTROTOMY FOR FOREIGN BODY.

BY DUNCAN MACARTNEY, M.A., M.D.,
Assistant Surgeon, Glasgow Western Infirmary, &c.

THE patient, Baby O., aged 6 months, was admitted to Ward XIII of the Western Infirmary, on 4th September, 1908, while I was acting for Dr. Dalziel. The story was that the baby's mother had been using a steel button-hook that evening, to encourage the "cutting" of a tooth, and by some inadvertency the button-hook slipped out of her hand and was swallowed by the child. Dr. Barron, of Bellshill, who was called in, had the little patient "screened," and finding that the button-hook was in the stomach, sent the case in to the Western Infirmary.

On admission the child was quiet and not suffering in any way, so that immediate operation was not deemed necessary.

A skiagram taken showed the foreign body lying at right angles to the long axis of the stomach. The accompanying diagram shows the position and relative size of the body. Successive skiagrams were similar to the one here, the hook remaining fixed in position.

On 7th September under chloroform, and after the

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[1] *Loc. cit.*, p. 469.

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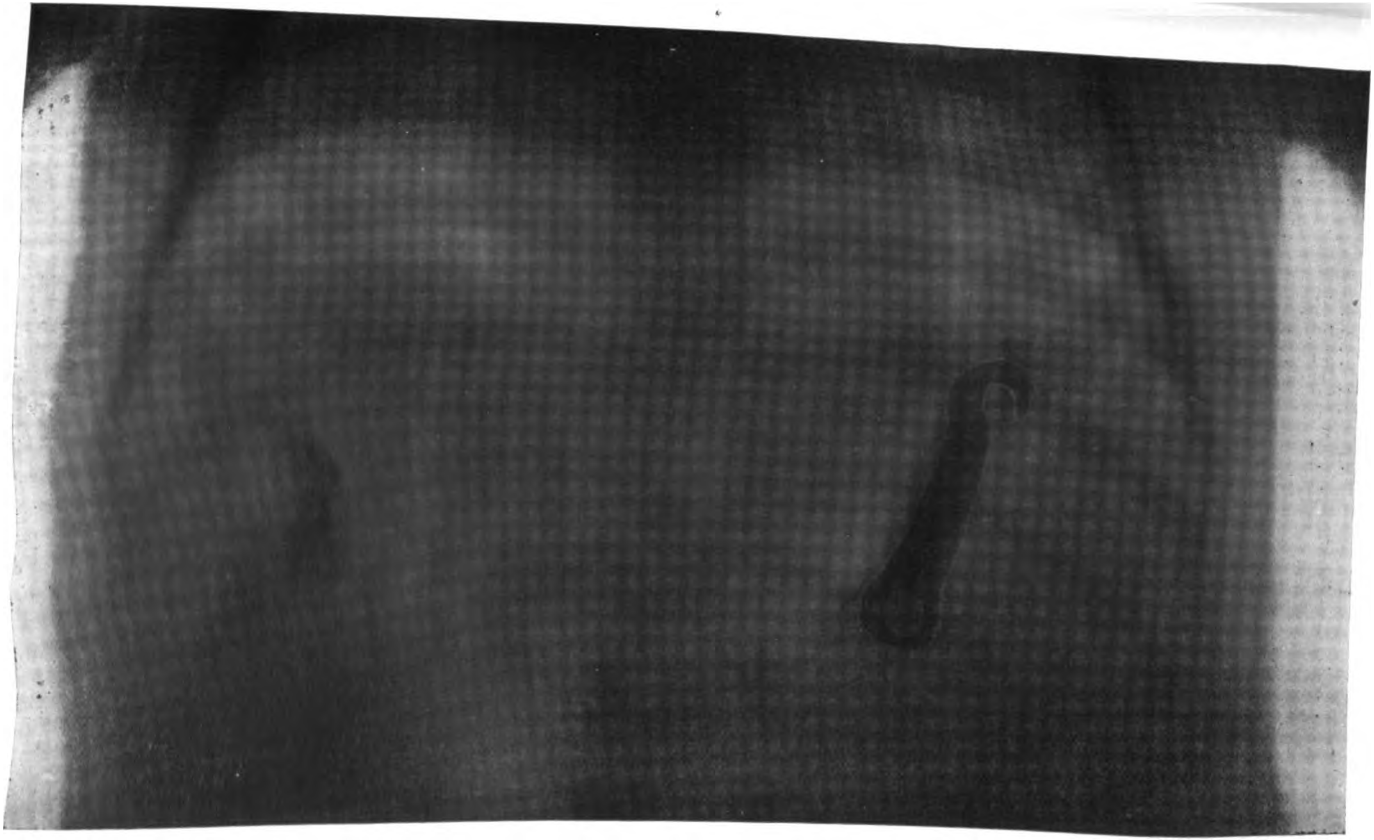

To illustrate Dr. Macartney's Case.

abdominal wall was prepared, an incision was made rather to the left of the middle line. When the cavity was laid open the left finger and thumb gripped the foreign body and brought it through the wound. A small incision over the hook allowed of its easy removal. The small wound (in the pyloric end of the stomach) was then sutured in three layers, and the abdominal wound carefully closed.

A rise of temperature occurred on the second day after operation, but soon passed away, and the recovery was uninterrupted by any complication.

Sips of saline solution were given at intervals during the first twenty-four hours; after that, natural feeding was adopted, the breasts of the mother being carefully cleansed and prepared as if for operation.

The child was dismissed twenty days after operation.

The button-hook was one of the folding variety; when folded it was 3¼ inches long by three-quarters of an inch broad. Considering the extreme youth of the patient, and the size of the swallowed object, I judged it right to operate.

Dr. Logan Taylor assisted, and Dr. W. C. Mackie gave the anæsthetic.

MEDICAL PRACTICE IN PONDOLAND, SOUTH AFRICA.

BY J. GRANT MILLAR, M.B., CH.B. GLASG.,
District Surgeon, Medical Officer of Health, and Justice of the Peace,
Flagstaff, Pondoland.

BY way of introduction to the subject of this article it may be as well to say a few words about the country and conditions of life here generally, as Pondoland is in many ways unique, and is probably a *terra incognita* to most readers of the *Glasgow Medical Journal.* It would be strange were it otherwise, for, much as South Africa has been written about, curiously enough Pondoland would appear to have escaped the notice of most writers, and, as a matter of fact, is as little known by the bulk of Africanders as it is by people in Britain.

Pondoland is now a portion of Cape Colony, but it is more generally recognised in South Africa as part of an extensive tract of country variously called "The Native Territories," "Kaffraria," or "The Transkei." The Native Territories comprise East Griqualand, Pondoland, and Tembuland, and extend eastwards from the Kei River in Cape Colony to the

Natal border. Pondoland was annexed to Cape Colony in 1894, and, for administrative purposes, belongs to that Colony, but it still maintains a more or less separate existence. The peculiarity of Pondoland is that, whilst administered by the Cape Colony, the country itself still belongs to the natives; that is, there are no farms belonging to white people, and no land owned by white people, it having been a condition of the annexation that the entire country should remain in the hands of the Pondos. The Cape Government retained to itself the right to appropriate sufficient land to establish centres of government for administrative purposes, but that was all, hence there is an extremely small white population. The very sites on which the various stores are built cannot be granted without the consent of the Pondo chief in the district concerned, and even then the trader to whom the licence and site are granted only holds them on sufferance, as it were; that is, he possesses no title deeds and has no security of tenure.

The country itself is a magnificent one, very hilly, one might say mountainous, not unlike some parts of the Highlands of Scotland, only on a very much larger scale. Although it contains several fine forests, Pondoland, as a whole, is poorly wooded. It would make a splendid country for farmers, particularly for stock breeding, and it seems a terrible waste that it should be so entirely in the hands of the natives, who do nothing to cultivate it beyond raising a few "mealies" for their own wants and a little "kaffir corn" to make beer with; but to discuss the reasons for this state of affairs would carry one beyond the scope of the present article.

Pondoland is blessed with an excellent climate. Roughly, it may be divided into two seasons—the summer (and rainy) season, lasting from about October until April, and the winter (or dry) season from April until October. There is a good deal of variability about the climate, just as there is in Britain, but not nearly to the same extent. Except for an occasional shower, there is practically no rain between the beginning of May and the end of September, and June, July, and August, at anyrate, can always be counted on as dry months. In the summer season the rainfall is a varying quantity, being greatest in December and January, whilst there is more or less rain in the other summer months according as the particular year is a dry or wet one.

The temperature is warm throughout the year. In winter it is usually fairly cold in the early morning and at night after sunset, but during the day, say from 10 A.M. until 5 P.M., one is usually bathed in sunshine, with the thermometer registering 70° F. to 75° F. There are occasional cold days, when the sun refuses to shine, but 60° F. seems cold here, and the thermometer is seldom below that. In summer the average temperature about the middle of the day is from 80° F. to 85° F. in the shade, whilst on very hot days it may go up to 92° F., or even higher. However, that there is little to grumble at in the climate may be judged from the facts that one can wear flannels and play tennis all the year round, and that oranges, lemons, figs, tomatoes, &c., grow luxuriantly in the open air.

Pondoland is divided into four large districts, in each of which there is a centre of government, or "magistracy," round which has grown a small town, or, as it is called in South Africa, a "township." Of these districts, Flagstaff is geographically the centre one, and, as regards area, at all events, also the smallest.

The district of Flagstaff is about 800 square miles in extent, and the centre of government is the village or township of Flagstaff. Here we have a resident magistrate, assistant resident magistrate (with courthouse, gaol, &c.), detachment of the Cape Mounted Riflemen (with camp or barracks), Church of England church, public library and school, post and telegraph office, &c., besides several shops or "stores," so that, although very much in the heart of a savage country, one is not entirely bereft of some of the necessities of civilisation! For medical purposes the district surgeon is the only person available, so that it may be granted at once that there is "plenty of scope." This, however, is more apparent than real, because the total white population in the district is under 200, although to make up there is a native population of close upon 30,000. If all the natives applied to a "white" doctor for medical aid there would be room in the district for several practices, but, as a matter of fact, it is only an extremely small percentage of them who do so, and it is seldom that one is overwhelmed with work, there not being enough to keep one medical man going without the assistance of the government appointment.

The district surgeon is appointed by the Government of Cape Colony, and is paid an annual salary, for which he has to perform certain duties without extra remuneration, and other duties at a fixed tariff rate. The chief duties to be performed, without extra remuneration, are—looking after the prisoners in gaol (they have to be inspected at least once a week, also their food and the gaol premises, &c.), attending to the native police and their wives and children (the last mentioned usually very numerous), also any white paupers in the district, besides acting generally as medical officer of health in regard to sanitation, drinking-water, any village nuisance, any epidemic disease, &c. It may be said at once that the duties mentioned above and covered by the government salary are not very onerous, the salary being more of a "retaining fee" than actual recompense for work done. Besides the above duties the district surgeon is required to attend members of the Cape Mounted Riflemen, their wives and families, at a tariff charge fixed by the government, to perform *post-mortem* examinations, to examine injured people in cases of assault, and to undertake vaccination tours when called upon to do so. These are amongst the chief government duties, and, on the whole, the government rates of payment are not unfair, though, as in most tariff rates, there are some amusing discrepancies. Perhaps the most amusing of these is the regulation which lays down, that for the performance of a *post-mortem* examination *within* three miles of the township the district surgeon is to be paid one guinea, but if the *post-mortem* is held at a *greater* distance than three miles from the village he is to be paid two guineas. The difference in fee is not to compensate for the greater distance travelled, as might be at first imagined, because whether the district surgeon travels one mile or fifty miles, and irrespective of what the particular duty may be (so long as it is undertaken on behalf of the government), he is paid a fixed travelling allowance of 1s. 3d. per mile. Hence, the only conclusion seems to be that the government consider a *post-mortem* performed four miles away to be twice as difficult as one performed two miles away! The fees for operations generally are inadequate, certainly for major operations, and are not always in accordance with the difficulty or magnitude of the operation, *e.g.*, for complete removal of the tongue the fee specified is three guineas, for performing tracheotomy the same. Again, "for surgical puncture of the bladder" the district surgeon receives one guinea, and is certainly well paid, but, on the other hand, for operating in a case of fistula in ano, or one of hæmorrhoids, he is only entitled to the same remuneration. Still, it must be confessed that in the practice of most district surgeons in the Native Territories any of the operations mentioned occur but seldom, so that the inadequacy of some fees matters the less. Of course, the above fees only apply to government patients.

One gets a good deal of travelling about on government work. There are no railways in Pondoland and no macadamised roads. Indeed, apart from the main post-cart roads, which no one in Britain would consider fit to drive on, there are no roads at all, and no bridges over the rivers, these being crossed at "drifts." If a river has been swollen by rain, as it often is in the summer time, the drift may be unfordable, in which case one has simply to turn back or wait near at hand on the chance of the river going down, which, as a rule, it does very quickly after the rain has ceased. If, however, one has come some twenty miles, and one's destination is just a mile or two on the other side of the river, this is distinctly annoying, more especially if one arrives after "sundown," and the only shelter to be obtained is at a very odoriferous and "much-alive" Kaffir hut. Still, it is wonderful how philosophical one becomes in this country, and how soon one gets used to little incidents of this description.

Most of one's travelling is, necessarily, done on horseback, and at least one good horse is an essential for every district surgeon. One may have to go twenty or thirty miles to a *post-mortem*, or to investigate a case of severe assault, usually, for the greater part of the way anyhow, across country with not even a path to follow, and as the country is very rough as well as hilly, one requires both a strong and a sure-footed horse. There are no hotels in Pondoland, but most of the stores give "accommodation" to travellers, oftentimes of a very rough description, but still better than nothing.

A *post-mortem* is held on every case of sudden or violent death, including suicides, of which there is a good number amongst the natives. A least, a *post-mortem* is held on every case that is reported to the resident magistrate, but one fears there are many cases not reported all. The favourite method of committing suicide is by hanging—very few Pondos commit suicide any other way. In fact, out of a fairly large number of cases investigated, I know of only one suicide that did not result from hanging, and that was in the case of a woman who cut her throat. There is a certain amount of "fatalism" amongst the Pondos—it seems to be inseparable from savage races—and they commit suicide for what appears to a European to be a very insufficient cause. They also go about it in a very deliberate manner. In more than one case on which I have held a *post-mortem*, the person committing suicide has actually occupied the time in walking from their kraal to the place selected for the deed in weaving a native rope with which to hang themselves, and in the one case of suicide by cut throat, the woman had previously spent some time in sharpening the knife used—a very inferior clasp knife, such as is sold in the Kaffir stores for sixpence or a shilling. As a rule, the suicides choose a most inaccessible place to make away with themselves—a tree on the side of a precipice, or the very centre of a patch of prickly "bush," but sometimes they hang themselves to the roof of their own hut.

The cases of death from violence (apart from cases of suicide and accident) are almost all the outcome of some fight arising from a quarrel over a "beer-drink," and are usually cases of fractured skull, the result of a blow from a knobkeerie or a stab from a stick, less commonly the result of a stab from an assegai. One meets with practically every description of fractured skull, from a fractured base with no external wound to a compound fracture where half the head has been knocked in, and all degrees between these two extremes.

Most government journeys have for their object the holding of a *post-mortem*, in which case the district surgeon is generally accompanied by the resident magistrate and a couple of native constables. The Pondos do not like having their relatives "cut up," but, as a rule, they offer no active resistance, though sometimes the presence of the magistrate and constables is necessary, and threats of the direful consequences that will follow any interference require to be used before permission is allowed.

A favourite device to try to escape the *post-mortem* is to bury the body before the district surgeon arrives, the hope being that he will not have it exhumed. In cases where this is done it only gives the relatives the additional trouble of digging up the body, but as it is only buried about a couple of feet below the surface, the labour entailed is not very great, although one is often delayed a considerable time before anyone will exhume it, all Kaffirs having the strongest dislike to touching a dead body. The uncivilised Pondos never use a coffin, but simply bury their friends in a blanket. Into the difficulties that surround the actual dissection of the body I shall not enter, but I have often sighed for the well-equipped laboratory of my old University. Still, when all is said, I do not know that Kaffirs behave much worse than many white people would under similar circumstances, which is all the more to their credit, as they could not, *à priori*, be expected to see the reasons for a *post-mortem* in the same degree. *Apropos* of which, however, one may remark that the "wily" Pondo, as he is known here, has not earned his name for nothing. There was one case in this district in which, during a beer-drink, a man got stabbed through the eye with a stick. The stick used was only about the thickness of an ordinary walking-stick, but it was used with great force, and passing along close to the nose, with an upward direction, entered the orbit, smashed through the supra-orbital plate, and penetrated for some distance into the brain, killing the man. Before I went out to make the *post-mortem* a friend of the man who had struck the fatal blow came into Flagstaff to see me. The object of his visit was to say that if I would find "the cause of death inside the man's chest" when I did the *post-mortem*, and report that the blow from the stick did not kill him, he would give me three or four head of cattle, or, in fact, anything in reason.

I was much struck with this evidence of "'cuteness" on the part of an uneducated nigger, his obvious idea being that I should say the man had died from heart disease or something of the sort, after his thorax had been examined. Possibly this brilliant idea was thought of owing to the external wound being comparatively small, but his "ingenuous" offer was not accepted, and the striker of the blow was awarded three years' imprisonment, a plea of culpable homicide being accepted, as is usual in such cases.

Before leaving the subject of *post-mortems* (they bulk somewhat largely in every district surgeon's practice) I should like to remark that the Kaffirs are very superstitious about having every scrap of the dead body buried, even going so far as to throw into the grave the water in which the district surgeon has washed his hands! The first *post-mortem* I did I nearly got into serious trouble through throwing away this water, not having learned at that time of their superstition in the matter.

And now to say something of private practice. This, in regard to the white population, does not amount to a very great deal. For one thing the numbers are small, the total population of the village being under 150, with an outside white population (almost entirely composed of teachers and their families) of about 50, and, for another thing, there is little serious illness amongst the adults, partly accounted for, I daresay, by their being mostly young and vigorous, partly also, no doubt, on account of the healthiness of the climate. There are no endemic diseases peculiar to Pondoland, and, fortunately, it is not a malarial country. There is an ordinary amount of sickness amongst the children, the usual complaints of childhood, such as measles, whooping-cough, croup, &c., occurring much as in Britain.

Considering how rough travelling is, and that everyone has either to drive or ride, it is surprising how very few serious accidents occur. In fact, there is not a great deal of surgical work of any kind to be done, which is in some ways fortunate, because one would be greatly handicapped by the want of any skilled assistance (my nearest medical neighbour is 30 miles away, about six hours' journey), so that one has to rely entirely on one's own resources, and become operator, assistant, and anæsthetist, all rolled into one! Under these circumstances any operations performed are generally operations of "necessity." For operations of "election"—at all events if of any magnitude—it is more convenient to send the patient into Kokstad, the capital of East Griqualand, where there is a well-equipped hospital, or, if the patient can afford it, into Durban, between three and four days' journey from Flagstaff.

With regard to the native population. Here no fault can be found with the numbers. Unfortunately the vast majority of the Pondos are still very uncivilised, and believe in their own "witch doctors" and "charms" rather than in a "white" doctor. Another obstacle that militates against the influence of the district surgeon is the stores, which not only sell all kinds of patent medicines, but also dispense medicines to the natives for various complaints, chiefly for worms and constipation, but also for diarrhœa, coughs, &c. Practically every store in the district—and there are between twenty and thirty scattered around—dispenses santonin and croton oil, particularly the former. They give a native as much santonin as will lie on a threepenny piece (known throughout South Africa as a "tikky"), with a little sugar, for which they charge the coin used as a measure. Needless to say, the storekeepers know little of the drug they are dispensing, and less of the particular kind of worm to which it applies. In justice to the government, however, one may say that the dispensing of such medicines by unqualified people is illegal, but the custom dates back such a long way—before the days of annexation and the advent of district surgeons—that it is difficult to stop. Fortunately for themselves the Pondos are not easily killed, though one trader unblushingly told me about a native who was absolutely collapsed, and nearly died from an overdose of croton oil administered by himself!

As in Britain, so here, the patent medicine fraud has also to be contended with. Every store has a large supply of patent medicines, and however much one may deplore their indiscriminate use, one cannot help admiring the ingenuity and business enterprise of their proprietors. One of the most widely-advertised patent medicines in Pondoland is a certain gentleman's "pink pills." These are not only advertised in English but also in Kaffir. Great placards and calendars, printed in Kaffir and with photographs of some of the principal chiefs, are sent round to the different headmen for wholesale distribution, and consequently the pills meet with a ready sale, as do numerous others which need not be particularised. I confess I was somewhat astonished the first time I came across such a placard pasted to the wall of a Kaffir hut. Truly, as has been well said, "great are the uses of advertisement!"

The Pondos, physically, are fairly good specimens of Kaffirs. They are not, on the average, very tall, but they are stoutly and sturdily built. Unlike the Zulu, the Pondo is not of a warlike disposition, which, considering the smallness of the white population in his midst, is perhaps just as well! Locally, he is distinguished as the "*wily* Pondo," *i.e.*, he prefers to gain his ends by strategy rather than by force, which is a roundabout but more polite way of saying that he is an arrant coward!

As regards the diseases to which they are subject. With a few exceptions these are the same as may be met with in Britain. Of the exceptional diseases the most interesting, as it is also the most common, is leprosy. There is a good deal of leprosy in East Griqualand, and a certain amount in the Lusikisiki District of Pondoland, but there are not a great many cases in this district. Of course, if at all possible, the Kaffirs conceal the existence of such a disease, so that it is believed, with good reason, that there are many more cases in the country than are reported. Such cases as I have seen personally have been chiefly amongst the Griquas, a sort of mongrel race descended from Dutch fathers and Hottentot or bush women. These people are mostly small and of poor physique, and are much dirtier in their habits than the average Kaffir, which probably, to some extent, accounts for the greater incidence of the disease amongst them. The existence of leprosy amongst the Griquas and Kaffirs—and it prevails to a fairly large extent in Cape Colony—lends no confirmation to Mr. Jonathan Hutchinson's theory that the disease may be spread by the eating of dried fish, because the eating of fish—fresh, dried, or tinned—is unknown amongst either Griquas or Kaffirs. On the other hand, there seems to be a good deal of evidence that the disease is spread by direct contagion. One series of cases come across recently seems to point to this conclusion. The cases occurred in three sisters, Griquas, all of whom were found to be suffering from the anæsthetic form of the disease. Their ages were about 25 years, 18 years, and 14 years respectively. They all lived together in one hut, and had done so for very many years. No attempt had been made to keep dishes, cooking utensils, or clothes even, for individual use, but such household articles as they possessed were used indiscriminately by any and all of them. The eldest sister was in an advanced stage of the disease, *e.g.*, she was minus portions of her hands and feet, whilst the anæsthesia extended above her knees in the lower limbs and to her elbows in the upper limbs. The other two were in less advanced stages, although even in the youngest one or two of the distal phlanges were black and atrophying, whilst the second sister was minus one or two of the terminal phalanges of both fingers and toes. The interesting point was that the stage of advancement of the disease seemed to correspond so well with their different ages that one was at once led to think that the second sister must have contracted the disease from the eldest, and the youngest in her turn had contracted it from either or both. Their clinical history altogether was interesting, but too long to detail here, only it may be stated briefly that neither father nor mother had leprosy (this I was able to confirm as I saw them both), but a maternal uncle had died of the disease. He had previously lived for many years with the family in the same hut, and besides him a still older sister (of the three girls I saw) had died shortly before also of leprosy. Doubtless in this family there was a hereditary predisposition to the disease, but all the circumstances pointed very strongly to the cases being contracted one from the other through direct contagion.

Up to date little has been done in Pondoland either for the suppression or relief of lepers. The chiefs in the Native Territories are quite willing to have the lepers segregated, but wish the hospital to be built or the isolation to be carried out somewhere in Pondoland. They strongly object to Pondo lepers being sent out of their own country to the leper colonies at Robben Island or Ernjanyana. The Cape Government have recently surveyed this district with a view to establishing a leper colony within the Territories, but so far, chiefly owing to a lack of funds, nothing has been done.

Amongst other tropical or semi-tropical diseases one comes across cases of bilharzia hæmatobia, contracted while bathing, whilst of minor ailments a skin lesion caused by the chigger flea (*Pulex penetrans*) is often very troublesome to get rid of.

Of the ordinary diseases to which the Pondo is subject there can be no doubt that tuberculosis holds the first place. Phthisis is, *par excellence*, the form that tuberculous disease takes in the Pondo, although cases of tuberculous glands, especially the glands of the neck (such as surgeons in Glasgow are only too familiar with), are by no means uncommon, particularly, as one would expect, in young people. There is also a certain amount of acute miliary tuberculosis, probably more than one knows about, because any number of Kaffirs—men, women, and children—die every year in Pondoland, who have never been seen by a European doctor, and, indeed, whose deaths have never been reported at all. Last year I performed a *post-mortem* on a boy of some 13 years of age, whose death was supposed to have been caused by violence. This suspicion proved to be quite unfounded, but it was a most interesting *post-mortem*, his body being simply riddled with miliary tubercles to such an extent that almost any of his organs—lungs, liver, spleen, or kidneys—would have made a perfect museum specimen.

Curiously enough, there would appear to be an almost entire absence of tuberculous bone disease. I have not seen a single case myself, and the experience of other district surgeons, as recorded in their annual reports to government, is much the same. To go into the reasons for the prevalence of so much tubercular disease in a country which one would at first sight expect to find comparatively free from it would make the present article too long, but I have discussed the the matter at some length elsewhere, and would refer anyone interested to that account.[1]

One also sees a fair number of cases of another great constitutional disease, namely, syphilis, although taking into consideration all the circumstances and habits of the Kaffirs, it is possibly surprising that one does not see more. Most reports, however, would seem to show that the disease is on the increase. The tragedy of the disease in this country is the large amount of infection that takes place non-venereally. Judging from the reports of the various district surgeons in the Colony,[2] there can be no doubt that a number of white children become infected every year through coloured nurse-girls suffering from the disease. This, of course, does not apply so much to Pondoland as to the more civilised portions of the Colony. Such cases as have come under my notice here are almost all in the tertiary stage.

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[1] *British Medical Journal*, 1908, vol. i, p. 380.

[2] Report of Medical Officer of Health for the Colony of the Cape of Good Hope, 1908.

One thing I have been particularly struck with is, that suppose a Pondo woman has had three or four children, one or two stillborn and the others living only a few weeks, the mother will come of her own accord and ask to be "examined." Although she may feel nothing the matter with herself, she appears to have no doubt that the cause of the children dying is due to some fault in her own health. Her instinct in this would appear to be in advance of that of most white people. Needless to say, in the vast majority of such cases the mothers are right in attributing the fault to themselves, and are found to be suffering from syphilis.

Apropos of a native wishing to be "examined," it is amusing to note that they one and all have a great belief in the powers of the stethoscope. For a Pondo to wish to be examined is tantamount to a desire to be "stethoscoped." Whatever their particular complaint may be—"chestache," "stomachache," "headache," or what not—none of them is satisfied unless the doctor goes over them with his stethoscope. Where they originally derived their belief in the powers of that useful instrument it is impossible to say, but so convinced are they of its efficacy as an aid to diagnosis that, to use a colloquialism, "there is no getting away from it."

Amongst the minor ailments to which the Kaffir is subject, worms and constipation hold a chief place. Both the roundworm (*Ascaris lumbricoides*) and the tapeworm (*Tænia solium*) are met with, but the former much more frequently. I find a very effective remedy for roundworm is to combine calomel with santonin, and follow with a good dose of mag. sulph. in the morning; this repeated for two or three consecutive days seldom fails in its effect, for the time being, at least. Constipation, also, is very prevalent, and one would surmise that the Pondos themselves have no very strong or reliable purgatives, which is unfortunate for their native "doctors," as such medicines are in great demand amongst them. The more they are purged, the more they think of the medicine. Ordinary aperients have not the smallest effect upon the adult Kaffir, even if given in "heroic" doses, hence one is forced to use the strongest purgatives one can. In this respect it cannot be denied that the natives' respect and reverence for such a drug as croton oil know no bounds. To a Kaffir, who cannot dissociate quantity from quality, the effect of two or three drops of croton oil is a never-ceasing marvel. At first, when given a dose on a bite of bread, he is extremely sceptical, and refuses to believe in the possibility of such a small dose of drug having any effect. Later, he comes to view the drug with a respect which is as great as his affection for the result produced, and that, to anyone who knows him, is testimony more eloquent than many words.

"Chestache," as rendered by my interpreter, is another frequent complaint of natives, the word being used to denote any form of chest affection, from a common cold to phthisis or pneumonia. A "cold" to the average Pondo is a very mysterious disease, which he cannot understand at all. The worst of it is that all natives are very curious to know the "cause" of their diseases, but the difficulty of explanation is very great. One supposes every medical man has been at a loss, now and then, to provide a satisfactory answer to a patient enquiring as to the "cause" of this or that ailment. Well, as may be readily imagined, the difficulty is a thousand-fold increased when one is dealing with a totally uneducated and ignorant savage. In many cases there is no Kaffir equivalent for an English term. Of course, if one were to rely on superstition pure and simple, there is an explanation at hand for "every ill that flesh is heir to," because so long as one attributes the illness to the "River God," to some one in the same kraal exercising a charm, or to the evil machinations of some offended ancestor, &c., the patient will depart not only thoroughly satisfied, but also with an exalted idea of the white man's skill. As it is, I fear many leave the surgery with a poor opinion of the white doctor's powers of explaining sickness, however much they may esteem the advice and medicine given!

Women and children form a large portion of one's patients here, as in every general practice, native children being no more exempt from sickness than white ones. The babies, in particular, are very lovable little specimens of humanity. It is really a sight worth seeing to go to any native kraal and watch from twelve to twenty babies, of from 1 to 3 years of age, toddling about stark-naked, and with their little stomachs bulging out much in the same way as the "corporation" of a city father is supposed to do. The wonder to my mind is how so many of them ever manage to survive the period of their infancy. There can be no doubt that the mortality amongst Kaffir babies is very great, but, on the other hand, they are born in such numbers that there is always a large and constant increase in the population. Practically all the babies are breast-fed, but only entirely so for some three months, if so long, although partially so for as long as two years, which is about the average time for a Kaffir mother to suckle her child. After the age of about 3 months the mother supplements the breast-feeding by giving the baby "amaas." This is cow's milk exposed to the air until it has become more or less sour and solid, and, as will be readily understood, very difficult of digestion by an infant 3 or 4 months old. Consequently, all manner of disorders of digestion are rife amongst the poor unfortunate "kiddies." If I have interdicted the giving of amaas once I have done so hundreds of times. But, not content with the giving of amaas, the child is probably not more than 6 months old before its parents are feeding it on "mealies," or Indian corn, the staple food of all Kaffirs. Mealies make very good food for horses, and their nutritiousness and wholesomeness, even for human beings, is undeniable, but they demand a very sound, not to say strong, digestion, and can hardly be considered ideal food for infants under 1 year old. In addition to these, what may be termed ordinary risks, there is an enormous death-rate from any epidemic disease that may occur. For example, last year hundreds of Kaffir children died from measles and its subsequent results, while this year scores are dying from whooping-cough, in each instance without ever having been seen by a European doctor.

To turn to some of the difficulties that beset a "white" doctor in a native practice. Practical difficulties both in the way of diagnosis and treatment are numerous, and some of them may be briefly referred to. Amongst the chief, perhaps, may be mentioned the impossibility of obtaining anything like an accurate history of the illness. Time does not exist for the average Kaffir. On the other hand, their memory is extraordinary. Hence, when they come to consult a European doctor, in many cases for the first time, they mix up events in an extraordinary fashion. Their idea seems to be to relate every symptom they can remember to have suffered from, but at the same time they relate it all in the present tense, so that it is often a matter of extreme difficulty to separate the past from the present, especially at first. To give a rough example of what is meant, one may listen to a long story—and a Kaffir is never short—of a patient suffering from diarrhœa, and, just as one is about to prescribe for that complaint, it will transpire that they suffered from diarrhœa long ago, and what they want now is something to relieve constipation! That is, possibly, an extreme instance, but illustrates my meaning and the difficulty of disentangling present symptoms from what has affected them in the, perhaps, remote past.

Another difficulty lies in the fact that probably a majority of one's patients have previously consulted a native doctor. These people, who deal almost exclusively in charms, and who, one need hardly remark, are absolutely ignorant "of the science and art of medicine," still hold considerable sway over the minds of the natives, especially as they are trusted by the uneducated, or "Red" Kaffir. Like quacks all the world over, they refuse to open their "mouti," or medicine bag, until they have been paid. Their lowest fee is a sheep or a goat, according to their reputation, the former being worth roughly about twenty shillings, the latter about five shillings. If the "medicine man" is a very "big wig," and he knows his patient has cattle, he may demand a "beast"—that is, a cow or an ox, a fee worth about ten pounds. Thus, it is a common occurrence to have patients coming to the surgery who preface the statement about their illness by saying that they have spent all their money on native doctors, and wish to be treated for nothing. This is certainly flattering to the reputation of the white doctor if not to his pocket. However, the real trouble caused by the native doctors arises in this way. None of them will treat a case for more than a week at the outside, and, if the unfortunate patient is not better at the end of that time, he is given up as hopeless. Amongst the Kaffirs to be despaired of is no light matter, because, if the patient is at all seriously ill, once the medicine man pronounces his verdict the relatives take no further interest in the case; they will no longer feed him, or attend to him in any way, so that the poor patient is likely to fulfil the prognosis, if one can dignify their assertions by such a name. The way this increases the difficulty of a white doctor treating the natives is, that no matter from what disease they may be suffering, they refuse to undergo a *course* of treatment. They will come once and take one bottle of medicine, but it is only with the utmost difficulty that any of them can be induced to keep up treatment. Even if they are much relieved after their first visit they never dream of continuing their medicine, no matter how they have been warned, but they wait until they relapse into their former condition, when they will probably turn up again, and so forth.

Some of these so-called native doctors have a few herbs which appear to do some good at times, but, when they do not content themselves with selling charms pure and simple, *e.g.*, giving a patient the dried gall-bladder of an ox or a bit of horn, &c., to hang round his neck or arm, they usually go in for scarifying or burning the skin of their victims in their efforts to drive out the demon of the particular disease. Hence, it is no uncommon thing for patients to come covered with scars previously inflicted by some native doctor. In the case of babies and young children it is absolutely pitiful at times to note the deep scars caused by burning or cutting in the hope of driving out the "devil" of their illness.

Fortunately, it is a fact, that in some cases "out of evil good may come." The result of this evil habit of scarifying the skin is to imbue practically all Kaffirs with a profound belief in its efficacy, a belief which is not only individual, but hereditary. The good that results from it is apparent when it comes to a question of vaccination against small-pox, or inoculation against plague. In regard to vaccination there are no "conscientious objectors" amongst the Pondos; they are all eager to be vaccinated, and, it is my opinion, that the population of the Native Territories is infinitely better vaccinated than the population of Great Britain. The procedure of scarifying the skin, however slightly, and rubbing "something" in, is one which thoroughly appeals to the native and which he highly appreciates. Vaccination tours are carried out in each district every three or four years, so that there is little chance of Pondoland even being decimated by small-pox. There are few adult Pondos who have not been vaccinated at least twice, and very many who have been vaccinated three, four, and up to as many as ten times. The Government ordered a vaccination tour of this district in 1906, and it may interest readers to relate how it was carried out. There are certain centres appointed, usually stores, around each of which there is a considerable population. The headmen in the vicinity are then warned that the district surgeon will be at their store on a certain day prepared to vaccinate, and all the people under them must attend. This usually means a gathering of anything from 500 to 3.000, depending on the population round the particular centre. The smallest number vaccinated in the district at any centre was about 800, and the largest about 2,500, the total for some fifteen centres being about 20,000. These figures doubtless seem somewhat appalling to medical men in Britain, and I confess I was myself somewhat dismayed at the magnitude of the task when first I heard of it. Still, it is wonderful what can be done by a little organisation and practice, and briefly it may be stated that about 1,000 persons per day were vaccinated at a rate of about 120 per hour, four marks being made on all previously unvaccinated (chiefly babies), and two on those already possessing obvious marks. The method adopted was to have the natives lined up in rows of twenty, then my interpreter went down the row washing all their left arms with a weak solution of lysol—the washing being a most necessary preliminary—after which I followed and did the vaccinating. Whilst the interpreter mustered and arranged the next row I was busy blowing out lymph from the tubes supplied, into a small glass receptacle—the breaking of the tubes and blowing out of the lymph being much the hardest part of the work—then proceeded to vaccinate that row and so on. No person who appeared was refused vaccination, even although he or she had many marks, and a great majority of the adults had several. For the benefit of those who grumble at the rate of payment for vaccination in Britain it may be remarked that the Government rate of payment here worked out at about three farthings per head, the district surgeon being paid by time and not per individual vaccinated. The onlookers always howled with delight if anyone screamed or shrank from the prick of the vaccinator, the young men being the chief offenders in this direction.

There are many other points in connection with medical practice in Pondoland that might be touched upon—the difficulty being rather what to leave out than what to put in—but sufficient has been said, it is hoped, to convey some idea of the work of a medical practitioner out here. Although so difficult from the ordinary run of practice in Britain it is not without its own charm. For one thing it is an ideally free and unconventional life, and one has ample opportunities of fresh air and exercise—I have covered over 120 miles on horseback in three days—so that, so long as a man is young at all events, the life presents many attractions and is certainly to be preferred to many a city practice in Britain. The drawback to living here is that one is so far removed from civilisation. As has already been said there are no railways in Pondoland, and one has either to travel by post-cart or in one's own private cart over roads, which are often only roads in name, for two or three days before reaching a town. Still, nevertheless and notwithstanding, personally I do not regret having come out here; it is a magnificent country, a fine climate, and one has an unrivalled opportunity of leading "the simple life" perforce, if not from choice!

Obituary.

JOHN DOUGALL, M.D, F.F.P.S.G.

By the death of Dr. John Dougall, on the 14th ult., we have lost one of the oldest members of the profession in the city. Dr. Dougall was born in 1829, and, in the earlier part of his career, worked as a chemist. He graduated M.B., C.M., in 1869, became M.D. in 1871, and was admitted a Fellow of the Faculty of Physicians and Surgeons in 1876. He was Lecturer on Materia Medica in the Royal Infirmary School of Medicine, becoming Professor of that subject when the School was incorporated as St. Mungo's College. This post he occupied almost till his death. He was also at one time Senior Physician to the Royal Infirmary, retiring about five years ago. The author of numerous contributions to the medical journals, he did not neglect the lighter side of literature, for he was the author of a volume of verses and of a historical sketch of the Southern Medical Society. He was a keen angler, and was also much interested in geology.

He is survived by a widow and grown-up family, to whom we tender our respectful sympathy.

CURRENT TOPICS.

The Birthday Honours.—The medical profession figures largely in the recent list of King's Birthday Honours, and we are gratified to note the Knight Commandership of the Bath which has come to Glasgow in the person of Principal MacAlister. Sir Donald MacAlister, K.C.B., is a man of many parts. Engineer, mathematician, and linguist, he is also a physician. He has held the Linacre Lectureship on Physic and the post of Physician to Addenbrooke's Hospital at Cambridge, and, in the share which he has had in the growth of the Cambridge Medical School, he has shown himself further to be an administrator of no mean ability.

He has been a member of the General Medical Council since 1889, and in 1904 he succeeded Sir William Turner, K.C.B., in the office of President. Since coming to Glasgow in February of last year, his talents, combined with his personal charm, have gained the respect and esteem of all with whom he has come in contact. Of the many congratulations and good wishes which he has received on the present occasion, none can be heartier or more sincere than those which we, in the name of his professional brethren in Glasgow and the West of Scotland, now extend to him.

In Dr. Thomas Oliver, of Newcastle-on-Tyne, who has just been made the recipient of a Knighthood, we have an old alumnus and graduate of the University of Glasgow. Sir Thomas graduated M.B., C.M. "with commendation" in 1874, and in 1880 he took his M.D., also "with commendation." After acting for some time as assistant to Dr. Wood Smith, Dr. Oliver proceeded to Newcastle-on-Tyne, where he has obtained a foremost position in his profession. He has interested himself largely in the subject of trade diseases, and in this connection is well known to the Home Office. We offer to him our felicitations on his receiving this well-earned distinction from the hand of His Majesty.

AYR COUNTY HOSPITAL.—At a recent meeting the directors appointed Mr. Farquhar Macrae, M.B., C.M., to be Consulting Surgeon to the hospital.

ELEVENTH ANNUAL REPORT OF THE GLASGOW DISTRICT MENTAL HOSPITAL, GARTLOCH, 1907-1908.—In the Medical Superintendent's report there is much interesting information. At 15th May, 1908, there were on the register 407 men and 344 women, a total of 751, thus showing an increase of 6 on the resident population as compared with an increase of 61 last year, and 1, 29, 33, and 34 in the four previous years. From a table showing percentages of admissions at different periods of life, it is seen that the decrease in the proportion of the admissions in the period of maturity (30 to 50), though fluctuating, still tends to persist, as does the tendency to increased admissions during the period of decline (over 50). While the character of the admissions was bad from the point of view of probable discharge or recovery, the recovery-rate was 39·6 per cent, calculated on the admissions. This rate is very satisfactory, being well above that for the Scottish Royal and District Asylums as given in the last Annual Report of His Majesty's Commissioners in Lunacy, viz., 34 per cent. Details of boarding-out and of deaths are also supplied, and the relation of insanity to alcoholism, as shown by histories of the cases, is made very apparent. Reports by the Commissioners in Lunacy follow that of Dr. Parker, and express the satisfaction of the Commissioners with the management of the institution. The remainder of the report is composed of statistical and economic tables, and the whole is not only of interest to the reader, but should be deservedly a source of satisfaction to Dr. Parker and his staff.

NEW PREPARATIONS, &c.

From Messrs. J. Morgan Richards & Sons.

Elixir Lactopeptine.—This is a clear solution of reddish tint, and is stated to contain 19 per cent of alcohol by volume and 38 grains of Lactopeptine in each ounce. Lactopeptine is said to contain pepsin, pancreatine, diastase, and lactic and hydrochloric acids. The sample examined has a vinous odour and is very palatable, both undiluted and when diluted with water. It has a slightly acid reaction. It is found to digest starch vigorously. In acid medium coagulated egg albumen is also well digested, but in alkaline medium the digestion of albumen is slow; possibly this is due to lack of enterokinase. The dose is from two to four teaspoonfuls, and it is claimed that not only is it a palatable form in which to administer Lactopeptine, but that it also forms for various drugs a serviceable vehicle by means of which the gastric mucous membrane is protected and absorption promoted. Potas. iodid., gr. v; sod. iodid., gr. v; sod. salicyl., gr. viiss.; potas. bromid., gr. x; sod. bromid., gr. x; chloral hydrate, gr. x; and antipyrin, gr. x, can be carried in an ordinary dose—indeed, on testing the solution, it is found that ʒi will easily carry these respective amounts and form clear solutions. The propriety of prescribing digestive ferments in the hope of promoting gastric and intestinal digestion is open to discussion, but if it be admitted that it is of service, then the solution under review may well be employed for the purpose, for it is undoubtedly an active digestive agent.

MEETINGS OF SOCIETIES.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.

SESSION 1908-1909.

MEETING I.—2ND OCTOBER, 1908.

The President, DR. WALKER DOWNIE, *in the Chair.*

I.—HEADACHE AND OCULAR TREATMENT.

BY DR. FREELAND FERGUS.

Dr. Fergus's communication will be found as an original article in our issue for November, 1908, p. 321.

II.—THE VACCINE TREATMENT OF INFECTIOUS DISEASES.

BY DR. JAMES MILLER.

Dr. Miller's paper will be found as an original article in our issue for November, 1908, p. 356.

MEETING II.—16TH OCTOBER, 1908.

The President, DR. WALKER DOWNIE, *in the Chair.*

I.—TRAUMATIC RUPTURE OF SMALL INTESTINE.

BY MR. GEO. H. EDINGTON.

Mr. Edington's communication appears as an original article at p. 401.

II.—THE ETIOLOGY OF RICKETS.

BY DR. LEONARD FINDLAY.

[ABSTRACT.]

Dr. Findlay read a paper on "The Etiology of Rickets," based on the results of a clinical and experimental research.

The author was successful in producing rickets in young puppies by subjecting them to confinement and lack of exercise, although their diet was composed of porridge and milk, and consequently quite adequate so far as fat and proteids are concerned. On the other hand, it was found impossible to induce the disease in animals by modified dieting; animals so treated became marasmic and died. On correlating these experimental results with the conditions prevailing in the life of the rachitic child, it is found that there is much evidence in favour of this idea of the cause. The disease occurs among the children of the poor residents in cities. It occurs at two periods of the child's life—before and after it has learned to walk, and in both of these types of cases one almost invariably obtains a history of confinement and a lack of exercise. In the latter, the inception of the disease is not infrequently subsequent to some illness of the child, such as bronchitis or measles, or to some illness on the part of the mother, both of which factors will necessitate confinement and lack of exercise. Moreover, the diet in many of these children may have been for several months the same, and yet it is only after the child has been confined for some time that the disease declares itself.

[For full paper, see *British Medical Journal*, 4th July, 1908.]

An interesting discussion followed. A decided majority of the speakers thought that Dr. Findlay was not warranted in deducing from his experiments that exercise was the main etiological factor in rickets.

Dr. Lindsay Steven said he considered that exercise would aggravate the bony deformities of rickets, and that he was in the habit of ordering the mothers to keep such children off their feet.

Dr. John Fergus had observed a dog develop rickets under the same surroundings as another dog which throve well, except that the former was tied up all day, while the latter got abundance of exercise.

Dr. Cowan thought diet the main etiological factor.

Dr. Beath Henderson thought there was no one etiological cause, but a series.

Dr. Findlay replied that he considered rest more likely to increase bony deformities than exercise.

III.—THE BIOLOGICAL MEANING OF AN EPIDEMIC.

By Dr. John Brownlee.

Dr. Brownlee's paper will appear as an original article in a future number of the *Journal.*

IV.—CARD SPECIMEN.

Dr. Alex. MacLennan showed a stereoscopic photograph of a hallux valgus, and a longitudinal section of a hallux valgus from the other foot.

OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

Session 1907-1908.

Meeting IV.—22nd January, 1908.

The President, Dr. E. H. L. Oliphant, *in the Chair.*

I.—SPECIMENS.

By Dr. G. Balfour Marshall.

1. Uterine adnexa removed by laparotomy.
2. Uterus and adnexa (double pyosalpinx) removed by laparotomy.

II.—THE RECORD OF A YEAR'S WORK IN THE ROYAL SAMARITAN HOSPITAL FOR WOMEN, GLASGOW.

By Dr. J. Nigel Stark.

Dr. Stark's communication will be found as an original article in our issue for May, 1908, p. 327.

The *President* complimented Dr. Stark on his excellent paper and the results obtained. He commented on his operations of myomectomy and the hysterectomy following Cæsarean section for carcinoma of the cervix.

Dr. A. N. M'Lellan thought that if fibroids were seen earlier than is usual in the majority of cases, myomectomy would be the operation of election; pregnancy occurred in uteri after the operation of myomectomy.

Dr. A. W. Russell discussed the question of treatment of fibroids by myomectomy.

Dr. Macfarlane gave his experiences of the good result of myomectomy for fibroids; also a case of myomectomy in a case of advanced pregnancy without disturbing its course. In the case of hysterectomy following Cæsarean section at full term, complicated by cancer of the cervix, there had been repeated hæmorrhages from the fifth month onward; in his opinion the nutrition of the child would be seriously affected, and from the resulting anæmia fatty changes in heart and liver were likely to occur.

Dr. Stark replied. In his opinion, earlier intervention in the pregnancy case with carcinoma of the cervix would have perhaps given a more favourable result; when first seen there was marked extension of the disease.

III.—TWO CASES OF PROLAPSE OF THE UTERUS IN THE VIRGIN.

By Dr. A. N. M'Lellan.

[Abstract.]

Case I, that of a girl, aged 16 years, was seen in spring of 1906, on account of a swelling at the vulva of four weeks' duration, with some pain in the lumbar region. No cause could be ascertained, the patient's work not entailing any heavy physical strain. On examination, the uterus was found to be outside the vulva, with descent of the vaginal walls. The uterus was replaced, and a ring pessary introduced with success.

Case II.—An unmarried woman, aged 32 years, the symptoms of prolapse having been present for nearly a year, but the condition being not so complete as in the first case. The prolapse was found to be due to a right ovarian tumour, dermoid in origin, and on its removal the condition of prolapse was cured.

Dr. M'Lellan thought that the cellular tissue in the base of each broad ligament was mainly instrumental in keeping the uterus in position. In his opinion, based on dissections of the pelvic floor, the perineum and the other structures were of little use in keeping the uterus up.

Dr. A. W. Russell instanced the case of complete prolapse in a virgin resulting from a fall from a considerable height.

Dr. Nigel Stark had a case of a virgin where the cause was continual strain at work.

Dr. Macfarlane had had two cases—one a farmer's daughter who had fallen from a height, and complete prolapse had occurred, requiring an anæsthetic for its replacement; the other, a girl of 16 years, had suffered from the condition, due to her work causing extra-abdominal pressure.

MEETING V.—26TH FEBRUARY, 1908.

The President, DR. E. H. L. OLIPHANT, *in the Chair.*

I.—FRESH SPECIMENS.

A. BY DR. A. N. M'LELLAN.

1. Carcinoma of the ovary. The peritoneum at time of operation had been studded with nodules; the opposite ovary and tube were so adherent that they could not be removed.
2. Pregnancy in a Fallopian tube, unruptured. On incision, the cord and placental site are seen. The other tube was thickened, the ovary being cystic.

B. BY DR. LOUISE M'ILROY.

Double tubercular salpingitis.

II.—THE EARLY DIAGNOSIS OF CANCER OF THE FEMALE PELVIC ORGANS AND ITS IMPORTANCE.[1]

BY DR. W. L. REID.

The discussion this evening is to be, as you are aware, on the early symptoms of cancer of the pelvic organs and its importance, and this I take to mean practically cancer of the uterus. For, setting aside malignant disease of the vulva and vagina, cancer of the other pelvic organs has really no early symptoms. Thus, cancer of the ovary is usually detected only after the abdomen has been opened for the removal of an existing tumour, or after the disease is so far advanced as to give rise to marasmus.

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[1] Read by the President in the absence of Dr. Reid.

In what I have to say I shall therefore confine myself practically to malignant disease of the uterus. As the chief object of this discussion is to bring out the individual experience of members as to what are the early symptoms and their sequence, I shall confine myself to my own personal experience of this common and formidable disease.

First, then, let me read to you the outstanding features of a few typical cases taken from my private case-books. I have not appealed to my infirmary journals because, from lack of intelligence, hospital patients often give very untrustworthy histories of their symptoms, indeed, often have paid little attention to them. I have also excluded all cases in which the result of operation or the after-history failed to substantiate the cancerous nature of the disease.

XXIV, 234. Æt. 63, had seven children; menopause thirteen years ago. Six weeks ago had a sudden and large discharge of blood, which has come and gone since, being now fœtid when watery. No pain; uterus removed; adenocarcinoma of body.

XXIV, 216. Æt. 60, no children; menopause ten years ago. Six months ago had a slight discharge of blood, which has come and gone since; occasionally offensive during the past three months. No pain; carcinoma of body.

XXII, 190. Æt. 41, four children. For past year has had some bleeding after intercourse, and for past three months has had more or less constant slight discharge of blood. Pain lately in left ovarian region and down left leg; no fœtor; carcinoma of cervix; uterus fixed.

XXII, 592. Æt. 68, unmarried; menopause twenty-eight years ago. For two years has had irritation at vulvar orifice; no discharge, no fœtor; hazel-nut sized tumour at fourchette; epithelioma.

XX, 396. Æt. 60, had three children; menopause ten years ago. About two years ago noticed a watery discharge, heavy in odour. Consulted two medical men, who advised vaginal douches. No hæmorrhage; no pain; fundus large; carcinoma of body.

XXII, 288. Æt. 48, had nine children. For last year periods have been irregular. A month ago had a flooding, and sanguineous discharge has continued more or less since. No decided fœtor; pain in both ovarian regions; carcinoma of cervix extending to vagina.

XXIII, 627. Æt. 61, had nine children; menopause ten years ago. For three years has had watery discharge tinged with blood; fœtor and pain only within the past four months; carcinoma of cervix; uterus fixed.

It would serve no good purpose to multiply details of such cases; let me rather give you the results of examination into the commonness and sequence of these early symptoms.

Of 31 of my private cases, the most common and the earliest symptom was hæmorrhage. It occurred first in 20 cases, serous discharge first in 5 cases, fœtid discharge of one sort or another first in 3 cases. At one period or another in the history of each of these 31 cases fœtor was noted in 19 cases and pain in 13. Enlargement of the glands and invasion of the cellular tissues are met with only in advanced stages of the disease, and so with pain. Last of all comes the so-called cancerous cachexia.

Let us consider for a moment why these symptoms should bear this relation to the disease and to one another. Dr. F. J. M'Cann, in his monograph on *Cancer of the Uterus*, states that the earliest sign of the disease is a watery leucorrhœal discharge. I think this is likely, and that it arises from the increased blood-supply to the parts irritated by the disease, but this seems not to attract the attention of the patient, and practically some menorrhagia, or, still more commonly, some irregular sanguineous discharge is the first symptom complained of. This is probably due to friability of the tissues and, by and by, a certain degree of necrosis. Bleeding then takes place when the tissues are stretched, as during sexual intercourse or straining at stool. As soon as marked necrosis sets in, hæmorrhage becomes a striking symptom as a rule. This is also true of serous discharge, which becomes fœtid only after infection has taken place from the vagina or bowel, or has been introduced by the finger of an examiner, or carried by the nozzle of a vaginal douche apparatus. This explains why fœtor is a later symptom in cancer of the body of the uterus than that of the cervix, as in the former case infection reaches the necrotic part with greater difficulty.

Enlargement of the glands, invasion of the surrounding cellular tissues, and metastatic growths are late symptoms, and indicate that the time for operative interference is past. Pain is usually a very late symptom, due to extension of the disease to the pelvic cellular tissues, or, in the case of the body of the uterus, to implication of the peritoneal surfaces. Last of all comes cachexia, due probably to a number of causes—intoxication from absorption of septic fluids, anæmia from bleeding, and, possibly, as Dr. M'Cann suggests, some product absorbed from the growth itself.

Is this knowledge which we possess important? I think it is. Knowing as we do that effective help can only be rendered to patients suffering from this fatal disease when it is got hold of in an early stage, and, further, that recent experience shows how comparatively hopeful well-selected cases have become, what means can we employ to secure its recognition in this early and hopeful stage?

It has been suggested that the early symptoms should be printed in leaflet form and circulated amongst the general female public. I think this would terrify women, and do very little real good. Another suggestion is to give such a leaflet to trained nurses only, but this would result in much the same mischief.

It seems to me that the only feasible plan is for medical practitioners to urge their patients to submit to a local examination whenever one or more suspicious symptoms are complained of, and to see that the examination is so thorough as either to prove or disprove the presence of cancerous disease.

Dr. Miller said the subject was of vast importance. In his experience, the patients came too late in many cases for any treatment. He had experience of two cases of special interest. In one, the patient had been operated on twenty years before for ovarian tumour. She was aged 49 years, and had passed the menopause five years before. On vaginal examination, on account of an irritating discharge, the uterus was found to be enlarged to 4 inches by the sound. Curetting was performed, and early malignancy of the endometrium was diagnosed. Hysterectomy was performed, with the result that the patient, when seen five years later, was found to be perfectly well. In the second case, the patient complained of slight lumbar pain, but no hæmorrhage or discharge, but had menopausal symptoms. On examination the cervix was found to be enlarged and hard. Hysterectomy was performed, and on examination two and a half years later the patient was found quite well. In his opinion, Dr. Miller said the absence of pain or hæmorrhage was not of much value in the diagnosis.

Dr. Russell had one case where nothing was made out on vaginal examination, although the patient complained of hæmorrhage. Six weeks later curetting was performed and malignant tissue was found, and, on removal of the uterus subsequently, extensive infiltration of its walls was found. In two cases of apparently advanced carcinoma of the cervix, hysterectomy was performed, and the patients were reported as well six years later. Dr. Russell thought a watery leucorrhœal discharge a very important symptom. He thought women should be encouraged to consult a doctor early in cases of uterine hæmorrhage.

Dr. Logan Taylor thought in cases of irregular hæmorrhage the uterus should be curetted and the tissue examined. In one case, where the endometrium showed the presence of endothelioma, hysterectomy was performed, but no malignant tissue could be found in the uterus, the curette having removed it completely. The general practitioner should have the curettings examined, and the tissue should be sent in a bottle of alcohol or in guttapercha tissue, and in as large quantities as possible. On examination of a uterus removed for malignant disease, the glands should be included. In cases of hæmorrhage persisting after labour or abortion, chorion-epithelioma ought to be borne in mind.

Dr. Balfour Marshall thought that the medical men and the public ought to be educated up to the diagnosis of cancer. In his opinion, cancer of the cervix was common, but of the body rare. In the former, irregular hæmorrhage is the common symptom, and such a case ought to be looked upon as malignant unless cancer can be excluded. When treating erosion of the cervix a small piece of tissue can be removed and examined, and all cases of polypi occurring about the time of the menopause ought to be examined. Papillomatous growths on the cervix are nearly all malignant. Early cancer of the body of the uterus is difficult to diagnose, and that only from the examination of curettings. In Germany and America leaflets are used to educate the public as to the dangers of cancer, and why not do likewise in this country?

Dr. Nigel Stark said there was often a divergence of opinion with regard to the malignancy of tissues examined by pathologists. He thought hysterectomy was performed in cases where cancer was not present. He thought the prognosis for operation as a permanent cure was not good in the majority of cases of cancer of the uterus.

Dr. Duff said cancer was usually diagnosed in its earlier stages after the menopause, as the unusual hæmorrhage made the patient anxious about her condition. In every case of uterine hæmorrhage a thorough examination ought to be insisted upon. A thorough knowledge of practical gynæcology ought to be enforced in the final examination of medical students.

Dr. Louise M'Ilroy thought that the majority of patients in hospital practice came for advice when too late, owing to their dread of a diagnosis of cancer. She thought the distribution of leaflets would have many objections.

Dr. A. N. M'Lellan said, in his experience, cancer of the cervix was very hopeless as to treatment, as the symptoms were so slight until the disease was far advanced. In every case of hæmorrhage an examination should be made, and not postponed in the hope of its cessation by drugs. Students should be made more familiar with bimanual examinations.

The *President* remarked that much could be done in the practical teaching of students and in the education of the family doctor. There were two classes of patients—one who came to be examined fearing cancer, and the other who refused examination on that account.

MEETING VII.—22ND APRIL, 1908.

The President, DR. E. H. L. OLIPHANT, *in the Chair.*

I.—SPECIMENS.

A. BY DR. JOHN LINDSAY.

Young embryo (under microscope), three-sixteenths of an inch in size, showing development of umbilical cord, and slight indication of branchial arches, but no limb buds seen; age supposed to be about end of second week, but no data could be obtained.

B. BY DR. J. NIGEL STARK.

Large multilocular ovarian cyst from right ovary, obtained by operation on a patient who had been operated on eight years before for right pyosalpinx; health was good for seven years, then developed an abscess in the pelvis on same side a year ago. This was drained, and the patient did well. At the operation for the removal of the cyst the appendix and uterus were firmly adherent to its walls.

II.—SOME CONSIDERATIONS ON THE PATHOLOGY OF EXTRA-UTERINE PREGNANCY, WITH A NOTE ON TREATMENT.

By Dr. S. J. Cameron.

Dr. Cameron's paper will appear as an original article in a future number of the *Journal*.

Dr. Macfarlane said that Dr. Cameron had given a complete *résumé* of the pathology of extra-uterine pregnancy. He had a case of pyosalpinx which in its history was typical of tubal pregnancy. He agreed with the treatment of doing posterior colpotomy in many cases.

Dr. Nigel Stark said the cause of pregnancy in the tube was unknown. He had operated on a patient twice for this condition. In his experience it was more common in hospital patients than among those of the better classes. Salpingitis as a causation is now denied, the erosion of the tubal mucous membrane being due to the action of the syncytium. Dr. Stark had one case where the pregnancy was of nine days' duration; at the time of the tubal rupture the hæmorrhage was enormous. He has had a case of tubal and uterine pregnancy at the same time. Dr. Laurie's case, in his opinion, was very typical. It is not good practice to operate at once unless the bleeding is going on; it is wiser to wait until the patient has recovered from the shock. Posterior colpotomy may cause infection of the peritoneal cavity from the vagina.

Dr. Laurie thought that the sooner the operation is done the better, as a second rupture might occur. He has had cases do well without operation.

The *President* asked if operation in the vagina was for diagnosis. He did not agree with Dr. Stark that this condition is more common in hospital practice, as there are so many more patients to draw from. The President thought the sooner a case was operated on the better.

Dr. Cameron agreed with Dr. Laurie that immediate operation was necessary, as the hæmatocele was not under control in the abdomen. He always had the abdomen prepared for abdominal operation when doing a vaginal one.

MEETING VIII.—27TH MAY, 1908.

The President, DR. E. H. L. OLIPHANT, *in the Chair.*

THE LATE DR. C. J. CULLINGWORTH.

On the motion of the President, a vote of sympathy was passed to Mrs. Cullingworth on the death of Dr. Cullingworth, late Honorary President of the Society.

I.—SPECIMEN.

BY DR. J. NIGEL STARK.

Dr. Stark showed a carcinoma of the ovary removed by abdominal section from a patient, aged 60 years. The symptoms being slight abdominal pain and swelling, and having been present for four months, no signs of malignant disease were evident from examination of the patient. The specimen, partly solid and partly cystic, was removed without rupture of its contents. No other focus was found in any of the organs of the abdomen. Microscopical sections showed the tumour to be of the adeno-carcinomatous type.

II.—SOME CAUSES OF FEVER IN THE PUERPERAL STATE.

BY DR. JAMES CRAIG.

It is not given to everyone to observe accurately what he sees, and his difficulties become doubly accentuated when he attempts to use language in such a way as to describe these observations. Consciously or unconsciously, we are all more or less biased by tradition or education, and, try as we like to get rid of these trammels, they will persist in asserting themselves in many ways and in diverse places. Unfortunately, the scientific man is no less free from these defects than the politician, the theologian, and the litterateur. The constitution of his mind and training is very much the same as in others, and, put him on whatever plane we like, we never seem to be able to change him. Indeed, the voice of authority in science now is as much followed after and as much dreaded as ever it was in the days of Spanish inquisitions and Middle Age superstition. We do not like to think this, and we calm our outraged senses by conning over the numerous examples in life in which we find this not to be the case. Somehow or other we put the suggestion aside, and turn our attention to pleasanter themes and Watteau landscapes, where the ugly and the vulgar do not penetrate or give annoyance to individual happiness. However, in the general trend of things, or rather their wise dispensation, every bane has its antidote. The average man does not trouble himself very much about the errors taught in school. He puts them to one side, and contents himself by following his own light, his own conscience, and taking the result upon his own shoulders. In general practice, one finds a good deal of one's own cherished notions and convictions strangled, knocked on the head, and thrown on the rubbish heap of intellectual oblivion. "Things are not what they are, and not even what they seem sometimes"—to parody the language of Bishop Berkeley—"then why should we be afraid?" A good deal of differences of opinion must be perpetuated *ad infinitum* as long as we cling to the opinion that the best way to teach a student his business is to make him serve his apprenticeship in a technical school, where even the conditions of life are vastly different from those which obtain outside. Mere technical knowledge of an art or a science is no apprenticeship at all, and the sooner the student is brought into the actual realities of his life's work, the better and more accurately will he observe the modifications wrought on every disease by their manifold and ever-changing surroundings. Disease and all physical phenomena are continually undergoing change and decay in their manifestations, and there is a necessity for constant observation in order to note these changes. The pregnant woman in the town has often certain characteristics that you won't see in the same person in the country. The same remark applies to different races and countries. As scientific men we cannot lay anything down with finality in these affairs. Happy are we, then, if we realise that individual observation is as necessary a discipline to the perfecting of the scientific person as his early groundwork in classified knowledge was necessary to form the ladder by which he reached his present position. But it requires considerable courage and not a little tact to express "with sweetness and light" notes of observations, which run somewhat counter to established authority and the general ideas current in classic medical books. Of course, we are all acquainted with the heterodox person, who revels in paradoxes, and loves to startle us with revolutionary ideas, and whose creed is more irremediably hidebound and unalterable than that of the worst type of the orthodox. This person can be improved by being let alone—as the young man void of understanding, or as the ancient Briton to whom long years have taught and brought no wisdom. It is not of these we speak, but of that vast multitude of scientific workers—"the mute inglorious Miltons"—who for various reasons do not articulate in language the many very useful observations they make on the weft and woof of human life as it flits in airy or tragic fancy across their astonished gaze.

Most general practitioners notice a great many transient feverish conditions between the seventh and ninth months of pregnancy, and a continuance of these symptoms up to the time of delivery will necessarily complicate matters very seriously. I have never made an obstetric engagement without warning the lady in detailed fashion regarding certain symptoms which ought to be taken notice of at once and treated. The most common cause of feverish conditions at this period is either bowel or bladder difficulties. The combined pressure of the uterus on the bladder, especially with people much on their feet and doing housework, brings on forms of intercurrent cystitis with changes in the mucous wall of the bladder. If this is long continued, the system becomes prejudicially affected, and the patient liable to very severe infections during the period immediately following delivery. In mild forms of this condition we give diluent drinks, such as barley water, buttermilk, skim milk, &c., with cream of tartar, sweet spirits of nitre, acetate of ammon. liq., and urotropine in the way of drugs. As a rule, certain digestive conditions are to be attended to, which are the forerunners and indirect causes of the bladder condition.

The bowel condition, however, is one which most commonly causes feverish conditions two or three months before birth. Most pregnant women are misled by the fact that whilst their bowels may move satisfactorily and well daily, there is a chronic form of constipation going on—in other words, their motions are only partial. On this account, many of them never take a dose of medicine from the beginning to the end of the pregnancy. Even then they prefer to dose themselves with some domestic syrup made by themselves or their friends, or have some messes of fruit dietary. Repeated doses of castor oil seem to be the most effectual means of treating such cases. One thing has surprised me very much in the administration of castor oil. Many patients, after a fairly large dose of castor oil, develop a temperature! The temperature does not last very long, nor is it very high, but I have seen the temperature rise within three or four hours of its exhibition. To avoid continuous temperatures and troubles at birth, I often suggest to these people the use of the enema regularly. Of course, many patients dislike such a method of treatment, and in these cases one can trust very well to the good old fashioned rhubarb, soda, and hydrarg. cum creta. Mucoid conditions of the bowel are very common in pregnancy, and by these means one can combat all such phases of disturbance quite effectively. Where one can get the patient to see the cause, this is the better plan, as it lessens the risk of sepsis at the birth from some of the bacteria found in the bowel. I have noticed that in those cases where one has a great deal of trouble with fæcal matter at the birth, there is most likely to be some form of feverishness following thereon. When we think of all these antecedent causes of feverishness in the pregnant woman, does it not seem a little far-fetched to ascribe what we know in a general way as puerperal fever to a tear, a cut, or some wound of the passages during the birth of the child? I have seen two well-marked cases of puerperal septicæmia now, and had my diagnosis confirmed by consultants, in which the initial rigor and symptoms began three days before delivery—in fact, before labour had commenced.

The first case was that of a primipara, at 35 years of age, married to a widower with one child. She remained very well, indeed, until within a week of the confinement, when she had to make arrangements to remove the little girl to her grandmother. The child was between 6 and 7, and the mother had been four years married to the father when this birth was about to take place. She was sitting at the dining-room window, waving adieu to the little one on the street, three days before her confinement, when she was seized with a severe rigor, and when I saw her the temperature was 103·4° shortly thereafter. The temperature gradually fell till the day of the onset of labour, when it was down to 99·4°, with occasional sweatings. Within ten hours of the onset of labour it finished naturally without assistance, and no other lacerations or tears than those usually associated with normal labour. On the day of labour, or rather after its completion, I made three thermometrical observations—the first was 99°, the second 99·8°, and the third 101° F. At six of the following morning I was called to the patient with another rigor and a temperature of 105°; this was now only sixteen hours from the delivery. I could see that it was a very severe form of puerperal septicæmia, and got a consultant out within six hours. He agreed with me on the line of treatment and the nature of the illness, and I asked him to come back in two days again. In spite of all treatment she got gradually worse, and died on the fifth day of illness. I spoke to the nurse, and tried to find some cause for the infection, but failed to elicit anything in any direction.

The next case is one I was called to four days before the onset of labour, and for which no one had been engaged, as the patient thought she had a much longer time to go. She had had some irregular pains and a rigor, and her temperature was 104°. She was certainly not in labour, so I put her on quinine, opium, and mercury, with a good dose of castor oil to begin with, as I found her bowels pretty much loaded. The temperature gradually fell to normal within two days, but at the beginning of the third day it rose with another rigor to 104·5°. The following day I waited for some hours until the baby—a fine, healthy boy—was born naturally. The temperature never fell below 100° even after the birth, and within the week she died of acute puerperal septicæmia, with rigors and high temperature alternately.

That those two patients had the disease within their blood before the birth took place I have not the vestige of a shadow of a doubt. Many of those cases must be analogous to the idiopathic and traumatic forms of erysipelas seen in surgical practice. Indeed, in the course of later enquiries, I found out that the mother of the second patient was continually being laid aside with recurrent attacks of idiopathic erysipelas of the face. This person, with such a history, must have had some predisposition to septicæmic diseases. That some women have good confinements naturally and some bad ones naturally goes without saying. Some patients seem proof against anything, while others go wrong with the slightest error. The dark, bilious, phlegmatic, sure-footed patients are much freer from feverish conditions than their fair, emotional, and nervous sisters. Nervous and irritable women fever up very readily. Some of them do so as a matter of course on the third or fourth day of the puerperium, and then again on the sixth or seventh. The whole sequence of matters is more like a neuralgic or asthma condition, in which nervous phenomena play the larger part, than in any physical basis explainable by bacteria or chemical sepsis. All of us know that nervous subjects make very bad patients, but all of us are not ready to admit that any of the ordinary neuroses are able to raise the temperature. I must confess I have seen many forms of transient fever during the puerperium in which I would be unable to give any other cause than that of the nervous system. If you occasionally get rises of temperature in supra-orbital or facial neuralgia as an obvious cause, why not get the same thing in the puerperium, where over-anxiety, dread of anything going wrong, or household worries impress themselves upon the delicate nervous system.

In children's diseases, I notice, the more neurotic the child the higher the temperature, and the very slightest cause may give rise to a very high temperature. The cheerful, happy, and contented surroundings of women during the puerperium do a great deal to keep down feverish conditions and all those predisposing causes which lead to further troubles.

In some cases of rapid delivery where you do not happen to be on the spot when the baby is born, and some little time has elapsed between the second and third stage of labour, on beginning to express the placenta you hear a gurgling of air mixed with the discharge you are pressing out. If this happens in small houses, with closely built tenements around, you are almost sure to have a feverish condition engendered a a few days after the birth. Such a condition rapidly improves with hot intra-uterine lysol douches for a day or two, and the temperature gradually subsides. These conditions are probably due to the entrance of polluted air into the cavity of the uterus before it has had time to contract.

Douching as a routine practice in normal conditions is sometimes apt to bring on feverish states. Some nurses, in my practice at least, have the habit of giving vaginal douches daily or twice daily for a week under all conditions and circumstances. My experience is that this continual douching does harm in many cases, on account of washing away from the passages some secretions which are evidently protective, and serve to immunise the patient from deleterious organisms. When one thinks on the water that is used sometimes, or the vessels in which that water is contained, or the extraordinary conditions under which the syringe may have been used previously, one does not marvel very much at the raised temperature following such a procedure. In most cases where there is a necessity to douche the patient in the puerperium, it is well to do it yourself, or at least superintend the doing of it. In a busy practice it means a great sacrifice of time, but it will amply repay you in the end by the sweet satisfaction of knowing that your work has been thoroughly and reliably done whatever the after-result may be. One gets rid of most of the mental anguish and ceaseless worry of a bad case when one knows that he is doing his duty in this manner, and his mind is free to consider the many problems of his other work.

It is quite impossible to roam over the whole field of the causation of fever in the puerperium. Many and perhaps more important causes we have left untouched. A paper of this kind should be more suggestive than exhaustive, and we trust that these few remarks strung together in this way will call to remembrance in others experiences and observations of a like nature. Other observers may have different or even contrary experiences on this subject, but it behoves us all to mark, learn, and inwardly digest. Life is too short, and the work to be done too serious and grave, for us to be wrangling over mere logomachies and names. If we observe differently, we agree in the main as to what is the ultimate end and issue of our life's work. With a large foreign mixture in our population, we are bound to note a great many modifications. In the children's hospital in Great Ormond Street in London I have seen symptoms of chorea which we never find in Scottish children. Those who have been in French and Italian hospitals will have noticed manifestations of nervous diseases in the female which we never see in this country. A broad, tolerant spirit is necessary to the proper appraisement of the medical phenomena we see all around us. In the district where I am located, and where I have been for seventeen years, I can see a great improvement in the conditions of childbirth. Feverish conditions during the puerperium are not nearly so common as they used to be, and people make more preparation for such an event. Even the poorest will have the pound of gamgee and the bottle of lysol ready, together with boracic lint, &c. The risks and the dangers of the puerperium are more thoroughly understood now, the days of the ignorant visitor and the ever-ready adviser are fast passing away, and I am sure most of us believe that the future will show a very much greater advance in sound knowledge and efficient preparation for what is one of the most important ordeals in human affairs.

Dr. Balfour Marshall said there were cases of sepsis of rapid onset for which it was often difficult to find a cause, many being due to pyosalpinx or rupture of an ovarian cyst. The cause of rise of temperature was often to be found in constipation and in liquefying of the bowel contents by purgatives, thus causing auto-intoxication. He had experience of cases where the temperature rose to 105° F., with rapid pulse and furred tongue, the lochial discharges being normal in character. On the administration of castor oil the patient's temperature fell to normal. Dr. Marshall thought that douching ought to be advised only on rare occasions, as there is much danger attached to it, and it should be done by the medical attendant only. As a canse of sepsis tears in the genital canal must be remembered, also constitutional causes for rise of temperature, such as influenza, &c.

Dr. Donald Duff was very interested in the paper, as he had experience of one case occurring before the onset of labour. The medical attendant had made no vaginal examination, but next day after confinement the patient had severe pain in abdomen, with distension, the diagnosis of ruptured gastric ulcer being made on consultation in hospital. When the abdomen was opened, the uterus was found to be congested, with pus foci in its walls, and the surrounding tissues were also infiltrated with pus. The uterus was not removed, and patient died soon after the operation. The history pointed to a recent gonorrhœal infection, which had set up general sepsis during parturition.

Dr. Adamson had experience of pyelitis and cystitis among pregnant patients, and he had found calomel useful and urotropine disappointing. He thought the third stage of labour the most important, as sepsis was often due to the retention of parts of the placenta or membranes.

Dr. Thomson recalled to memory three cases of rise of temperature after labour. In one the confinement was normal, the membranes complete. On the third day the temperature rose, and patient had a convulsive seizure. On examination of the interior of the uterus a placenta succenturiata was removed, and within twelve hours the temperature was again normal. In the second case the patient had sat up hurriedly, and thus caused retroflexion of the uterus; when it was replaced the temperature fell. In the third case, the nurse had massaged the abdomen so vigorously that she had caused retro-displacement of the uterus.

Dr. M'Kendrick had cases where the temperature rose without apparent cause, and on inquiry he had found it due to the nurse having given a douche. In his opinion, douching should always be done by the medical attendant.

Dr. Jardine had published a case some months ago, where the temperature was high before labour occurred; the cause unknown; after labour it became normal again. Purgatives often reduced the temperature, and the question of rashes after the administration of enemata was explained by a liquefaction of the bowel contents and their partial absorption. The puerperal condition was prone to allow of the invasion of sepsis, as evidenced by a case where a patient, while in the later weeks of pregnancy, was suffering from cellulitis of the hand, brought on by receiving a splinter of wood into her finger. The labour was normal, but death from acute sepsis occurred in forty-eight hours. Many lessons are to be learned from *post-mortem* examinations of patients who have died from sepsis, often something entirely unsuspected being found. The nervous element must always be considered as a cause of rise of temperature. In the case of septic discharges occurring in patients in hospital, the nurses are not allowed to douche. Drainage of the uterus is got best by raising the head of the bed, and by allowing the patient up as soon as possible.

Dr. Nigel Stark had experience of a death from puerperal sepsis, where, at the *post-mortem* examination, the abdomen was found to be filled with pus from a ruptured pyosalpinx.

The *President* thanked Dr. Craig for his interesting paper.

REVIEWS.

Applied Physiology: A Handbook for Students of Medicine. By ROBERT HUTCHISON, M.D., F.R.C.P. London: Edward Arnold. 1908.

A MEDICAL student is tempted to think that anatomy is of special importance to the surgeon, while physiology is more closely related to the province of the physician. Later on, however, the same individual may, as physician, be found to have changed his mind to some extent, and to hold that the physician cannot know too much about anatomy, whereas his attitude towards physiology is apt to be uncertain and unsatisfactory. The latter science may, of course, retort that medicine is just as unstable as itself, and that doctrines which appear to be well established, if not actually of fundamental importance, may within a few years be seriously shaken and possibly overthrown.

Dr. Hutchison himself comments in his preface on the small size of the present volume, on the little space occupied by the actual facts of physiology, and on the paucity of those facts which have as yet any direct practical implications. It is rather striking to find that no chapter is allotted to the nervous system, the muscular system, or the special senses.

When we proceed to the perusal of this volume, we are soon reminded of the admirable treatise by the same author on the subject of *Food and the Principles of Dietetics.* Indefatigable worker as he must be, Dr. Hutchison has the gift of lucid and interesting writing. As the book is designed only for students, the tone of authority in its style is an advantage; but even then it is perhaps a little too dogmatic to say, without any qualification whatever, that the rate of the heart's contraction "is increased by eight beats per minute for every rise above the normal temperature of 1° F." (p. 70).

In the eight chapters of the book, applied physiology is considered in relation to the following subjects:—(1) metabolism, (2) body heat, (3) the blood and hæmopoietic organs, (4) the heart, (5) the circulation, (6) respiration, (7) digestion, and (8) excretion. There are 3 coloured plates and 18 figures. We can recommend this volume to practitioners as well as students, as one which they may study with much profit.

Atlas and Text-Book of Human Anatomy. By DR. JOHANNES SOBOTTA. Edited, with Additions, by J. PLAYFAIR MCMURRICH, A.M., Ph.D. Vol. III: Vascular System, Lymphatic System, Nervous System, and Sense Organs. With 297 Illustrations, mostly in Colours. London: W. B. Saunders Company. 1907.

THIS is the concluding volume of the work, and is concerned with the delineation and description of very important structures and systems.

The plates of the vascular system show both vessels and nerves, and, in order to avoid repetition of plates, some are found in the section on arteries, and others in that devoted to nerves. This slight inconvenience is, however, minimised by the references in the text to the plate in which the individual vessel or nerve is to be found.

All of the plates are good, but special praise is due to those depicting the vessels and nerves of the head and neck. In these the student can see at a glance the general lie of structures, and the practitioner can with the greatest ease sharpen his mental picture of the relationships.

There are many plates of the brain and central nervous system and of the sense organs, and these maintain the general excellence of the *Atlas*. In addition, helpful diagrams and sketches will be found in the text.

This work is one which will be found of great use by students and practitioners, and we can recommend it to both classes. The volumes are a credit to author, editor, and publisher.

Landmarks and Surface-Markings of the Human Body. By LOUIS BATHE RAWLING, M.B., B.C.Cantab., F.R.C.S.Eng. London: H. K. Lewis. 1908.

WE are glad that in this new edition of his work the author has resisted the temptation to enlarge its scope—it is so good in its present form. The diagrams are excellent and not overcrowded with detail, the explanatory text is clear and concise, and altogether it is a most useful handbook.

A Text-Book of Surgical Anatomy. By WILLIAM FRANCIS CAMPBELL, M.D. With 319 Original Illustrations. London: W. B. Saunders Company. 1908.

THIS work does not pretend to give a complete account of the various structures met with in the dissecting room. The facts which it contains are those having a practical bearing, and we may safely say that we have seldom come across a volume so free from padding.

The subject treated in any paragraph is printed in thick type, and this, together with a good index, enables the reader to obtain what he wants with a minimum expenditure of time. There is nothing very new in the matter, but the author's way of presenting it is, while terse, not at all disagreeable. The illustrations are excellent, and are to be commended as an auxiliary to the text.

The paper necessary for the satisfactory printing of the half-tone blocks renders the volume not only bulky but heavy to carry, and it is questionable if this will help its popularity with students. All the same, we think that no one who becomes its possessor will have any reason to feel disappointed.

Arterial Hypertonus, Sclerosis, and Blood-Pressure. By WILLIAM RUSSELL, M.D., F.R.C.P.Edin. With 36 Illustrations and Plates. Edinburgh and London: William Green & Sons. 1907.

THIS is a work which demands attention from all who take a special interest in diseases of the circulatory system and in the subject of abnormal blood-pressure. Part of the author's teaching is no doubt heterodox, but the diligence and earnestness with which he has worked at his subject make it necessary for his opponents to study his position before entirely rejecting his conclusions. Beginning with a chapter on the normal structure and movements of arteries, Dr. Russell proceeds to discuss blood-pressure, the diseases of arteries, hypertonus, and the causes of hypertonic contraction. He describes a new schema of the circulation devised by Dr. Cargill Knott and himself to illustrate certain questions of blood-pressure. He then proceeds to speak of presclerosis and the mode of production of arteriosclerosis. The later part of the work is to a considerable extent clinical, and illustrated by actual cases. A chapter is devoted to angina pectoris, and the relation of this and allied conditions to an arterio-cardiac reflex having its origin in the abdomen, and causing hypertonic contraction. Another chapter treats of the phenomena caused by hypertonic contraction, or spasm-constriction of cerebral arteries. There is no index, but the table of contents at the beginning is, perhaps, sufficiently detailed. Some therapeutic results put on record in this volume are well worthy of notice.

Guide to the Clinical Examination and Treatment of Sick Children. Second Edition, Greatly Enlarged and Rewritten. By JOHN THOMSON, M.D., F.R.C.P.E. With 160 Illustrations. Edinburgh and London: William Green & Sons. 1908.

A GOOD many years have elapsed since the first edition of this work appeared, and it is accordingly not to be wondered at that Dr. Thomson, having been induced to issue a new edition, has found it desirable to make great changes in the book. As he himself points out, the present edition is more than twice the size of the first, but it is still quite free from the aspect of undue bulkiness. In addition to other subjects that naturally find a place in the book, there are chapters on growth and development, on the teeth, on the skin, on the temperature, on mental defect, on the nose, mouth and throat, on infant feeding, on nursery hygiene, and on therapeutics. The work strikes us as both interesting and practical, and it should prove of much value to practitioners. We note that since 1894 the author has had as many as forty-one cases of congenital hypertrophy of the pylorus under his observation. Dr. Thomson may be confidently recommended as a highly experienced and thoroughly trustworthy guide in everything that relates to the medical care of sick children.

Our Baby: For Mothers and Nurses. By MRS. J. LANGTON HEWER. Eleventh Edition. Bristol: John Wright & Co. 1908.

A BOOK which has reached its eleventh edition, completing 60,000 copies, needs no praise, and the authoress may well be pleased at the continued appreciation of *Our Baby* since it first appeared seventeen years ago.

The present edition has been thoroughly revised and partly rewritten without adding much to its size. It is a reliable guide, in whose pages much sound advice is given, and might well be read by all mothers and nurses with profit to themselves, not to mention the welfare of their infant charges.

Insanity and Allied Neuroses: A Practical and Clinical Manual. By GEORGE H. SAVAGE, M.D., F.R.C.P. London: Cassell & Co., Limited. 1907.

THIS well-known text-book has been revised and augmented by its author with the co-operation of Dr. Goodall, Medical Superintendent of Cardiff City Hospital for Mental Diseases. The classification which is followed is based mainly on symptomatological lines, being probably the most suitable for diagnostic (and didactic purposes. The various forms of mental disorders are treated *seriatim* in a careful and interesting manner, each type being amply illustrated by clinical records of cases drawn from the author's wide and practical experience. There is perhaps some lack of definition, more especially in the chapters on general paralysis of the insane, where the reader is left somewhat in doubt as to the author's opinion of the nature of that malady.

In each section a brief account is given of the morbid anatomy associated with the disorders, but it is rather disappointing to find that only cursory reference is made to the investigations which have recently been conducted on biological lines in this country.

The book contains many excellent drawings and microphotographs of the various pathological changes associated with mental diseases. In the section dealing with the medicolegal relations and with the procedure in lunacy it is important to note that the subject is treated with reference to English law.

The Practical Medicine Series. Vol. II: General Surgery. Edited by JOHN B. MURPHY, A.M., M.D., LL.D. Series 1908. Chicago: The Year Book Publishers. Glasgow: G. Gillies & Co. 1908.

THIS year book maintains its good style and principal characteristics in the new volume. The works are carefully selected, and subjects of importance and novelty are accorded generous treatment in the matters of space and reproduction. Bier's treatment, anæsthesia, immunity, and most of the progressive features of the year's work find places in this volume. References to the original communications are given, and many reproductions of original drawings and photographs are used to illustrate the text. There is a good index, and the book will be found of much use as a guide to the views of many minds on many subjects.

International Clinics. Edited by W. T. LONGCOPE, M.D. Seventeenth Series, 1907, Vols. I to IV. Philadelphia and London: J. B. Lippincott Company. 1907.

IN their scope and general arrangement these four volumes of *International Clinics* are essentially similar to those of former years. In the first volume there is again a useful survey of the "progress of medicine during the year 1906," and the rest of this volume, as well as the whole of the other three, contains a series of articles dealing with points of interest in almost every branch of the healing art. The majority of the writers are again American, but French medicine is represented by Dieulafoy, Calmette, Chantemesse, Brocq, Letulle, Robin, Weil, and others; and among the British writers are Parkes Weber, Purves Stewart, Tubby, and Thomson and Buchanan of our own city. This publication, however, is now so well known to the medical profession that we need say nothing more regarding the issue for 1907, otherwise than to again congratulate the editor and his publishers on the production of a most excellent work.

The Extra Pharmacopœia of Martindale and Westcott. Revised by W. HARRISON MARTINDALE, Ph.D., F.C.S., and W. WYNN WESTCOTT, M.B.Lond., D.P.H. Thirteenth Edition. London: H. K. Lewis. 1908.

THIS well-known and truly admirable work continues to grow in size as estimated by pages, though the use of a different paper has been more than enough to prevent an increase in the thickness of this edition as compared with its predecessor. The work has been thoroughly revised, and many parts of it entirely re-written. The *Extra Pharmacopœia* should be in the hands of every medical practitioner and druggist.

The Medical Annual: A Year-Book of Treatment and Practitioners' Index. Bristol: John Wright & Co. 1908.

IN his prefatory note to this, the twenty-sixth, volume of the *Medical Annual*, the editor expresses his ideal of such a work that it should never be consulted in vain. After a careful perusal of the present volume, the conviction is borne in upon us that his ambition has been more than realised. We cannot find any department of medicine or surgery in which an addition to our knowledge has been made throughout the year that has not been dealt with, and in some instances at considerable length. The *Annual* has now an established place with general practitioners, and to those whose busy professional life debars them from reading at first hand contemporary medical literature, it is indeed a welcome volume. The illustrations and plates, as in previous years, are copious, and add greatly to the value of the work. It can safely be said that the volume reaches the high water mark this year, and the editor and publishers have to be congratulated on the result of their arduous labours.

Supplementary First Aid to Miners. By WILLIAM B. ARTHUR, L.R.C.P. and S. Ed. Bristol: John Wright & Co. 1908.

THIS little pamphlet of twenty pages or so gives some useful hints regarding the special injuries to which miners are liable, and their appropriate treatment. It is well, however, that the author insists that the information given must be supplemented by instruction in a class, or from one of the many excellent manuals on the subject of "first aid" in general. If for nothing else than the sound advice given on page 27, as to the information to be furnished to the doctor when called to an accident case, the book will prove useful, and may with advantage be inserted into one of the manuals.

The Sexual Instinct. By JAMES FOSTER SCOTT, M.D. Second Edition. London: Sydney Appleton. 1908.

THE preface to this work should, if anything, be even more carefully read than the general body of the book itself, as, in the former, the author shows forth his ideas in approaching a subject which is generally reserved for the flippant treatment of the smoke (or similar) room.

It must be evident that a scientific study of the question of the sexual instinct is of the utmost importance to all, but particularly to the medical profession. The author states that the sexual instinct is second in importance in human life to that of self-preservation; but, as a matter of fact, it is at least doubtful if the former is not, on the whole, far more powerful and constant in its action, as in modern life the instincts of self-preservation, and the necessities for food and drink, are met almost before they have time to formulate themselves; while, in the case of the sexual instinct, it must be only on rare occasions that it is gratified at the time and in the manner and direction suggested by the individual instinct.

The chapters on the relations between the sexes are excellent alike in tone and wise moderation, and the author must be commended for his most judicious treatment of a very difficult subject when it is set out in the broad glare of print. At the same time he is probably not a dancing man, and is therefore a little hard on the dancers of both sexes in his analysis of their emotions.

The section dealing with prostitution is one which deserves to be studied by every man and woman in the community. The influences which are at work where women take to this calling are shown to be as creditable to the female sex as they are discreditable to the male. Male prostitutes (if the term may be allowed) exist, and they are not driven to this from poverty, seduction, or gross overcrowding.

Criminal abortion is treated in a very detailed manner, possibly more so than is advisable, looking to the title of the book. On the other hand, there can hardly exist any doubt that the chapters on gonorrhœa and syphilis are absolutely contrary to the whole spirit, and outwith the scope, of the book. It is even doubtful if the short chapter on onanism exalts the undoubted value of the earlier part of the book. The last chapters on continence and marital and extra-marital intercourse are carefully treated.

This work is worthy of careful study throughout.

School Hygiene. By ROBERT A. LYSTER, M.B. London: W. B. Clive. 1908.

FROM beginning to end this manual is worthy of unqualified praise, and at each stage it bears evidence of the most careful attention to every detail of practical importance.

As the author says, there is no doubt that of recent years much instruction in hygiene and physiology has been given in all grades of schools, with surprisingly little beneficial result. There is little doubt that, admirable as such teaching may be in itself, the application of the knowledge in daily life is too great a task when it is considered that few of the teachers have had careful training in the subject from experts. To a very great degree this little work supplants systematic instruction of the teachers, as the purely scientific aspects have been carefully avoided, with the result that the average teacher will find every part touched upon so fully and simply explained that he will be enabled at once to point the proper direction in the application of the information to the specific school with which he is concerned.

Part I deals with the school building itself, and includes clear information on such points as site, construction, lighting and heating, ventilation, and sanitary appliances. The illustrations in this part are, as they ought always to be, diagramatic, and almost self-explanatory, although some slight exception may be made in the case of Fig. 12*b*, where a photographic reproduction is rather a failure. In the chapter on ventilation the author adheres to the old figure of 0·02 per cent permissible added impurity from CO_2 due to respiration, and expressly disagrees with the figures suggested under similar circumstances by Carnelly and others. The importance of the question of the addition of moisture to the air when heated and supplied on the plenum system is also fully and properly dealt with by the author.

In Part II, dealing with physical training and the laws of health as applied to the scholar, the author is perhaps at his best, and in every chapter gives abundant evidence that he has made a close and accurate study of the important problems concerned. The illustrations in this section, especially those relating to postures at desks, &c., are indeed admirable, and are worth the careful attention of all medical practitioners, whether associated with this special department of medical work or not. A *résumé* of the more important points connected with the organs and functions more directly connected with school work, viz., eyes, ears, throat, and voice, is given in a way which renders it easy for the teacher to detect abnormal conditions in an early stage.

The chapter on personal hygiene is excellent; that part dealing with the teeth and their decay, and the means of preventing the latter, is of the utmost importance, and deserves the most careful study by the teacher.

Part III, dealing with the subjects of medical supervision and school medicine and surgery, sustains the same high note of excellence. The causes and treatment of common ailments and conditions found in school children are summarised in such a way as to be readily available for use by the teacher. The advantages of systematic physical examination of the children are very properly specially emphasised in this connection. Chapter VI, on the treatment of accidents and emergencies, is very good as far as it goes, but possibly this chapter might with advantage be considerably extended in future editions. The diagrams showing the method of performing artificial respiration are not up to the general level of the book. The same remarks apply to the succeeding chapter on epidemic diseases. In this chapter meningitis is not mentioned at all, although small-pox gets perhaps unnecessarily undue prominence. Again, the importance in schools of the prodromal signs of epidemic disease in general, such as severe headache, is not indicated, but this is evidently a simple overlook which will be rectified as soon as possible.

The concluding chapter, on school closure and disinfection, has again as its only fault the fact that it is too short, even granting that the teacher has usually no direct part in the actual carrying out of the process of disinfection.

Altogether, the book is of great value, and can be cordially recommended to all teachers and senior scholars.

The Law in General Practice. By STANLEY B. ATKINSON, M.A., M.B., B.Sc. London: Oxford University Press. 1908.

THE title of this work, with the suggestive after-title on the front page of "Some Chapters in Every-day Forensic Medicine," gives an impression that information of considerable value to the general practitioner will be found. Unfortunately, this is hardly the case; while the discursive manner in which it is written militates still further against its usefulness.

In the first chapter some good advice is given regarding the value to every general practitioner of the Medical Defence Union. In the same way the advice to occasionally scan the pages of the *Medical Register* should be followed. The author points out that it was declared judicially in 1876 that "a person who is on the *Medical Register* may call himself what he likes." Hints as to threats and attempted blackmailing will be found to be sound, and should be followed explicitly in all cases. Most of this chapter, however, deals with subjects outwith the law in general practice.

Chapter II, dealing with medical evidence and witnesses, while correct in its matter, contains nothing which is new or likely to greatly assist the practitioner when placed in the circumstances mentioned.

Chapter III gives some useful condensed information relative to medical certificates and reports, and the fees allowed for the same.

The law of defamation in relation to the medical practitioner, in Chapter IV, will be found useful, particularly that part referring to the much-debated question of "professional privilege." The difficult question of what action a medical practitioner should take when he suspects that a patient, whom he is called upon to attend, is being slowly poisoned, presumably from some criminal motive, is dealt with gingerly and, on the whole, unsatisfactorily by the author.

Chapter V, the law of negligence in medical practice, contains some items of considerable value, notably those dealing with anæsthesia, permission to operate, malpraxis, unqualified practice, compulsory examination of the person, and consent for *post-mortem* examination.

The difficult and complicated question of abortion, spontaneous and criminal, in medical practice, receives due recognition in Chapter VI, where also are considered the tests for drunkenness, and the question of permissibility of hypnotism in medical practice.

Chapter VII, dealing with cases arising in the coroner's court, can, of course, only indicate in a very general way the importance of medical evidence therein. Dr. Lankester's statement, as far back as 1872, that "in nine cases out of ten a coroner's inquest, without a *post-mortem* examination, is a farce," is noteworthy, and is certainly not less true to-day than it was then. On page 221 the various pathological conditions which may give rise to external appearances similar to those found in death from slow starvation, are tabulated, but the list is by no means complete, a serious drawback. Better have no list than an incomplete one.

The last chapter, a short one, gives some illustrations of the limitations of medical evidence in certain cases. The law is too apt to assume that there is no limitation at all.

No reference is made to the differences of procedure in Scotland, at least in any detail. Apart from this defect the book will prove of service to every medical practitioner at some time or other in their career.

Verhandlungen der Berliner medizinischen Gesellschaft aus dem Gesellschaftsjahre, 1907. Band XXXVIII. Berlin: L. Schumacher. 1908.

THIS official volume of *Proceedings* of the Berlin Medical Society is a proof of the way in which the members of the Society continue to investigate individual cases and disease in general.

There is a wealth of material contained in the volume, and it is one which as a work of reference merits its place in every medical library.

ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

MEDICINE.

Treatment of Recurrent Pleural Effusion by Sterilised Gaseous Injections. By M. le Dr. Vaquez; reported by M. Arnold Netter (*Bulletin de l'Académie de Médecine*, 6th October, 1908).—In April, 1888, Potain reported three cases of pneumothorax followed by pleural effusion in which this method had been employed with great success, and without the risk of the dangers attending rapid evacuation. To Vaquez is due the credit of applying the method to the more common condition of recurrent pleural effusion. Since 1902, when his paper was published, 100 cases have been reported, and the present author divides these into classes where the treatment is necessary, useful, or without practical result.

Cases of *recurrent serofibrinous pleurisy* give the best results, a definite cure often being obtained. With effusion of 3 or 4 litres the removal of the fluid could not be undertaken in the usual way without grave risk, but by withdrawing, say, half to 1 litre and injecting a quantity of gas, and then continuing the evacuation in this way, the operation was well borne. The production of this pneumothorax gives rise to less inconvenience than the liquid effusion, and, in addition, prevents the pouring out of more fluid. Patients who had been previously tapped numerous times, required frequently, after the gaseous injection, no further treatment. Cases are reported in which the patients at this date have remained well for from eighteen months to three and a half years. These results have been obtained in cases proved to be tuberculous.

In *hæmorrhagic pleurisy* from cancer these injections have retarded, and even prevented, the reappearance of the exudate. Barr, of Liverpool, injects at the same time some adrenalin.

In *acute serofibrinous pleurisy* this method is not so definitely indicated, because the ordinary treatment is usually sufficient; but where tubercle is suspected it may be employed with advantage, while the introduction of air into the pleural cavity immobilises the lung, and is said to hinder the aggravation of pulmonary lesions. In these cases injections of oxygen are sometimes employed.

In *empyema*, due to the ordinary pyogenic cocci, this method is contra-indicated; but good results are reported in *purulent tuberculous pleurisy*, and even underlying pulmonary tubercle has become quiescent.

As regards technique, a Y-shaped tube is employed by Vaquez and others, one limb being for aspiration of the liquid and the other for injection of the gas—the latter being plugged with cotton-wool to act as a filter. Others use some modification of this method. One volume of gas is injected for two volumes of liquid withdrawn. It is advisable to perform the operation in stages, withdrawing the liquid and injecting the gas alternately. Sterilised air or nitrogen may be used. Oxygen is absorbed too quickly.

—GEO. A. ALLAN.

Chlorosis with Thrombosis of the Subclavian Vein. Report of a case by Edmund A. Rodgers, M.D. (*Boston Medical and Surgical Journal*, 17th September, 1908).—Of 51 cases of thrombosis in chlorosis collected by Schweitzer in 1898, 4 occurred in the upper extremity, 33 in the lower extremity, and 12 in cerebral sinuses. Thrombosis of the femoral vein, with extension into the iliac and inferior vena cava, is the commonest condition met with.

The present patient was a girl, aged 18, engaged as a factory-worker, and for a number of years had drunk ten cups of tea and four cups of coffee daily. She had always been constipated, and for two years had suffered from headache and fatigue.

On 8th November, 1907, she first noticed that her arm, from shoulder to finger tips, was swollen, a condition which increased daily. There was no pain or dyspnœa. On admission to hospital five days later, the left arm was at different points three-quarters of an inch to an inch and a quarter greater in circumference than the right. Hæmoglobin was 60 per cent, and well-marked hæmic bruits were present. The patient was treated with six 5-grain Blaud's pills daily, and 15 drops of fluid extract of cascara night and morning. Eight days later the arm had returned to its normal size, while the hæmoglobin was 70 per cent and red cells 4,200,000 per cmm Four months later, hæmoglobin was 95 per cent and red cells 4,375,000 per cmm., while the patient had remained in good health and was free from all symptoms.

The chief points of interest in the case were the occurrence of thrombosis in an unusual site, in a mild case of chlorosis, without discomfort to the patient, and without fever.—Geo. A. Allan.

SURGERY.

Cystic Tumour of the Suprarenal Body Successfully Removed by Operation, with Notes on Cases previously Published. By Alban H. G. Doran, F.R.C.S. (*Proceedings of the Royal Society of Medicine*, Surgical Section, 16th June, 1908).—This communication is of interest and importance as a reminder that all suprarenal tumours do not fall within the range of the so-called "suprarenal rests" or suprarenal sarcomas.

The patient, a female, aged 62, was admitted to hospital on account of an abdominal swelling and pain. She had been subject to dyspeptic attacks, and for a few months previous to admission had had superadded to the discomfort of the dyspepsia sharp abdominal pains, worst at night, and referred to a lump in the left side. The duration of the tumour is thus indefinite. On abdominal examination, the tumour, a firm oval body, freely movable, was found to occupy the left loin. The only abnormal feature discovered in the urine, in several specimens, was an occasional dense deposit of mucus. Cystoscopic examination revealed some turbid urine being ejected from the left ureter, and this created a suspicion that the left kidney was implicated in the tumour. At the operation, however, this supposition was entirely disproved. The abdomen was opened along the outer border of the left rectus muscle, and after the right kidney had been examined and found normal the operator proceeded to examine the tumour. It was covered in front by the splenic flexure of the colon, and, after being drawn somewhat downwards, it was exposed by an incision made through the peritoneum on the outer side of the descending colon. The tumour was encapsuled, was easily enucleated, and proved to be a thick-walled cyst. The left kidney lay behind and below it; the tail of the pancreas did not touch the tumour.

The vessels which had entered into the tumour were ligatured, the rent in the peritoneum was sewn up with catgut, and the abdominal incision was closed with silkworm-gut stitches.

The contents of the tumour "consisted of about half a pint of bloody fluid mixed with broken-down tissue;" they were unfortunately spilled and lost. In colour the tumour was of a deep purple-bronze; its walls were rigid. After several months in fixing preparations it measured 4 inches by 4½ inches by

3 inches. The walls were from a sixth of an inch to a quarter of an inch thick, but on examination, even with a hand lens, no layers or special structures could be differentiated. The inner wall was rough from deposits of old clot. The cyst cavity was absolutely single, showing no trace of any septum. There was no macroscopic indication that the tumour was adrenal in nature. Microscopic sections of the wall, however, showed undoubted adrenal tissue embedded in the stroma towards the outer surface.

There was no epithelial lining to the inner wall of the cyst.

Seven months after operation the patient was in very good health.

Mr. Doran then proceeds to refer to similar cases in literature, and quotes, with criticisms, from the reports on other twelve somewhat similar cases.

In summary the author concludes that most cysts of the suprarenal body are blood cysts, whether they result from traumatism or from some contributory pathological change within the organ.

Cystic tumours resulting from neoplasms of the suprarenal gland are seldom surgically interesting, there being usually co-existing cysts in several of the other organs.

As regards symptoms and diagnosis:—

1. A history of injury is not infrequent.
2. Pain appears to be the rule, sometimes having the characters of a dyspepsia, at other times those of a colic. The pain usually leads to the discovery of the tumour.
3. Fluctuation and mobility are usually less marked than in a case of hydronephrosis.
4. Bronzing of the skin is very rare.

Treatment.—The tumour should be enucleated from the capsule in which it lies. It is safer to explore through an abdominal than through a lumbar incision, since some of these cysts have adhesions to the vena cava, aorta, or pancreas. Incomplete removal is unsatisfactory, and may lead to difficulty from retraction, and to spilling of the cyst contents.—W. Rankin.

MATERIA MEDICA AND THERAPEUTICS.

A New and More Rational Method of Treatment of Leukæmia by the X-Ray. By Alfred Stengel and Henry K. Pancoast, Philadelphia (*Journal of the American Medical Association*, April, 1908).—In considering briefly the pathology of leukaemia, the writers express their belief that the disease, both in the spleno-medullary and in the lymphatic forms, originates in the bone-marrow, that it is closely related to neoplastic processes, and that the secondary changes in the spleen, liver, and other organs are due to metastatic deposit of myeloid elements, with subsequent proliferation *in loco.*

In reviewing treatment they state that with the exception of arsenic, which occasionally exercises an inhibitive or even temporarily curative effect, drugs are practically valueless. An analysis of 69 cases, which up till September, 1907, had been treated by *x*-ray therapeutics, showed that while 46 cases were more or less benefited primarily, 59 in all died or were in a critical condition, and only six could be regarded as "permanently cured."

The essential feature of the "new method" is the direction of the *x*-ray applications to the bone-marrow of practically the entire skeleton as the primary object in the treatment, and the relegation of splenic and glandular exposures to a position of minor or secondary importance.

The advantages claimed for this method are—

1. That exposure of the bone-marrow rather than the spleen implies a much more direct attack against the cause of the disease.
2. That bone-marrow exposure induces a satisfactory reduction of the spleen

and other lymphatic enlargements, and a slow but steady reduction in the general leucocytosis.

3. That the danger of toxæmia, which sometimes results from direct exposure of the spleen or lymph nodes, is largely avoided.

4. That the patient's general condition shows early improvement, and the bone pains encountered, in the spleno-medullary type especially, are usually relieved after a few applications.

The report is based upon the treatment of five cases, and the technique employed is explained in detail.

It is added that acute cases, those with acute relapses, and those in which evidence of marked toxæmia are manifest, will not respond to this or any other treatment, and, as a rule, any *x*-ray exposure whatever is contra-indicated in such cases.—R. Speirs Fullarton.

The Local Use of Magnesium Sulphate Solution in the Treatment of Erysipelas, with Report of Cases. By Henry Tucker (*The Therapeutic Gazette*, 15th June, 1908). The application consists of a saturated solution of magnesium sulphate in water. This is applied in facial cases on a mask consisting of from fifteen to twenty thicknesses of ordinary gauze, of sufficient size to extend well beyond the area involved, a small opening being made to permit breathing. No opening, however, is cut for the eyes. The mask is then thoroughly saturated with the solution, applied and covered with oiled silk or wax-paper, and wet as often as necessary to assure a moist dressing—usually once in two hours, depending on the time of year, or the temperature of the room. The dressing should not be removed oftener than once in twelve hours to permit an inspection of the parts, and should be immediately re-applied. The infected area should not be washed while the treatment is employed.

The advantages claimed for this form are (1) the drug is inexpensive, non-toxic, clean, and easy of application; (2) the patient very promptly obtains relief from the distressing local symptoms; (3) the temperature rapidly falls to normal, usually during the second twenty-four hours, and does not rise again; (4) internal medication is not indicated in uncomplicated cases, the only treatment being a milk diet until the temperature reaches normal.

The writer reports 54 cases of erysipelas treated by this method, and states that he has employed it in over 700 cases of various forms of inflammation with uniformly good results; but he admits that how the results are accomplished he does not know.—R. Speirs Fullarton.

Lecithin in Exophthalmic Goitre. By Henry D. Berkley (*Johns Hopkins Hospital Bulletin*, September, 1908).—In a "therapeutic note" the writer states that for the past three years he has used an alcoholic solution of lecithin, with very excellent results, in many cases of nervous asthenia (not psychasthenia), and recently has extended its service to a few cases of exophthalmic goitre with strikingly favourable effect. "The neurasthenics and goitre cases, despite the nauseous and disagreeable odour of the solution, cling to the remedy as an opium *habitué* does to that drug, and never seem to tire of it until the nervous symptoms have been allayed, and the gain in weight approaches the normal. They state that an hour after the medicine is taken 'the nerves' are quieted, and for a time there is a cessation of the acute symptoms, such as tremor, and thereafter a slow return—at the first—after some hours."

The writer appends abstract histories of four cases of Graves's disease, in two of which treatment by rest, hyperalimentation (specially with milk), and the administration of lecithin was followed by marked improvement, and in two cases by apparent cure.—R. Speirs Fullarton.

An Analysis of Four Hundred Cases of Epidemic Meningitis treated with the Antimeningitis Serum. By Simon Flexner and James W. Jobling, New York (*Journal of the American Medical*

Association, 25th July, 1908).—In making up the figures on which the tabulations were based all cases which survived the first dose of serum less than twenty-four hours have been excluded, the writers considering that any marked benefit which the serum may be assumed to exert could hardly be effectively exhibited before the first twenty-four hour period following its administration had elapsed. The eliminations, accordingly, include chiefly patients who were moribund at the time of their admission to hospital, and who survived only a few hours—from one hour to five or six hours—and, in addition, a small number of rapidly fatal fulminating cases.

Results according to the ages of the patients.—The total number of cases tabulated is 393, of which 295 were recoveries and 98 were deaths, giving 75 per cent of recoveries and 25 per cent of deaths.

Patients.	Total number.	Recovered.	Died.	Percentage of deaths.
Under 1 year, . .	22	11	11	50·0
1 to 2 years, . .	19	11	8	42·1
2 to 5 years, . .	68	52	16	23·5
5 to 10 years, . .	79	70	9	11·4
10 to 20 years, . .	105	80	25	23·8
Over 20 years, . .	87	64	23	26·4
Age not given, . .	13	7	6	46·1

The youngest child which recovered was 1 month old.

Results according to the period of injection:—

Period of injection of serum.	Number of patients.	Recovered.	Died.	Percentage of deaths.
1st to 3rd day, . .	121	103	18	14·9
4th to 7th day, . .	100	78	22	22·0
Later than 7th day, .	107	68	39	36·4

In 65 cases the period of injection was not ascertained.

This table renders sufficiently obvious the beneficial influence of early injection. The period embraced in the last group is irregular, since not a few patients came under treatment when they were in a semi-chronic or chronic state after many weeks of illness. But the writers consider the outlook, even for the latter class of cases, not wholly discouraging, and they are of opinion that "so long as the diplococcus is still present in the meningeal exudate, and the mechanical damage to the anatomic structure is not irreparable, the employment of the serum holds out hope of considerable benefit."

Manner of termination of the symptoms.—Of 270 cases analysed, 201 terminated by lysis and 69 by crisis. In 220 cases which recovered, the average period of duration of the active symptoms was about eleven days.

Influence on diplococci, spinal exudate, and leucocytosis.—It was found, in cases which ended favourably, that soon after the serum injections were begun the diplococci tended to be greatly reduced in numbers, to disappear from the fluid part of the exudate, to become wholly intracellular (unless they were now entirely absent), to present certain changes in appearance, as swelling and fragmentation, and to stain diffusely and indistinctly, and, coincidentally, to lose viability in cultures. The cerebro-spinal exudate rapidly lost turbidity, and returned to a limpid condition; and in association with this change there occurred a fall, often very rapid, and even critical, in the number of leucocytes in the general blood-stream. The obverse of these phenomena was seen in cases not responding to the serum, or responding imperfectly, in which death was the result.

Relapses in the course of the treatment were not very frequent, and rarely did a case terminate fatally when the serum treatment was resumed without delay and vigorously pushed. In the great majority of cases recovery from the disease was complete. The number of complications which arose in them was small, and the only persistent defect noted was deafness. This occurred in a few instances only, and was more often than not noted early in the disease before the serum injections were begun.—R. Speirs Fullarton.

The Results of the Use of Antimeningitis Serum (Flexner's) in the Johns Hopkins Hospital in 1908. By Dr. Sladen (*Johns Hopkins Hospital Bulletin*, August, 1908).—Before the use of this serum the results of the treatment of the cases of epidemic cerebro-spinal meningitis admitted to the Johns Hopkins Hospital had been as follows :—

During the years 1889-1907 inclusive, out of a total of 33 cases, there were 21 deaths and 12 recoveries—a mortality of 64 per cent. In all these cases the meningococcus was demonstrable in smears or cultures of the spinal fluid.

Between January and August, 1908, 19 cases of acute cerebro-spinal fever were admitted. The meningococcus was demonstrable in all of them. Of these 19 cases, all of which received the serum treatment, 16 recovered and 3 died—a mortality of 16 per cent. Of the 3 cases that died, 1 was a fulminant case; another was a child, 29 months old, admitted on the fourteenth day of the disease, who died forty-eight hours after admission, from paralysis of respiration, after having been kept alive for sixteen hours by artificial respiration; and the third was a very stout coloured woman, who was admitted with a complicating broncho-pneumonia of both lungs, and who died forty-eight hours after the first injection of serum.

Most of the cases were temporarily upset by the lumbar puncture and the injection of the serum. During the injection they usually complained of pain in the knees, or hips, or about the rectum. These pains persisted from two to ten hours after injection, and following the injection there was usually a slight rise of temperature with increased restlessness. Urticaria and erythematous eruptions were not uncommon. It took from twelve hours to three days before favourable signs and symptoms ensued. Favourable cases reacted to a certain extent after one injection. Some cases required but one injection, while others had as many as six. It was the rule to give the serum daily until the temperature remained normal, and to renew injections as soon as a recrudescence occurred.

The first effects were a fall in the temperature (following the initial rise), and subsidence of delirium, headache, pain in the neck and back, and general hyperæsthesia. Strabismus, stiffness in the neck, and Kernig's sign were more persistent, and Kernig's sign was often the last feature to disappear. Pressure signs and symptoms yielded rapidly, although the amount of serum injected might be greater than that of the fluid withdrawn.

—R. Speirs Fullarton.

DISEASES OF CHILDREN.

Urinary Infection in Children. By John Zahorsky, M.D., St. Louis (*Pediatrics*, September, 1908).—The primary object of this article is to emphasise the fact that too little importance has hitherto been attached to this subject in the teaching of medical students. It impresses one with the necessity of making a careful examination of every system where the cause of the child's illness is at all obscure, and the examination should include a microscopical examination of the urinary sediment. In his own practice the author found 46 cases of urinary infection in infants and children in the course of two years.

The cases were divided into three clinical varieties—(1) those showing a febrile type; (2) those whose "malnutrition" was the marked feature; (3) those presenting urinary incontinence.

As regards the first variety, the author notes a peculiarity of the fever, which has a certain diagnostic value, viz., the absence of any great systemic depression.

"The infant with a temperature of 105° may still be inclined to play and take an interest in the surroundings. The cerebral and circulatory functions usually do not show that marked depression which is found in some other infectious diseases."

"In every case of fever in infants and children, the cause of which is not determined by a physical examination of the body, a microscopical examination of the urine should be made."

The great tendency to relapse is worth special notice.

Hexa-methylamine in large doses, and uncombined with alkalies, is found of most service in the author's experience.—W. RANKIN.

NERVOUS DISEASES AND INSANITY.

Plasticity and Amœboism of the Cells of the Sensory Ganglia. By G. Marinesco, Bucharest (*Revue Neurologique*, November, 1907).—During the past few years the theory of nervous amœboism or plasticity of the nerve-cells has been regarded as a dead doctrine. Professor Marinesco has recently returned to the study of the subject, and in the present paper gives an account of his experiments and observations, which would lead to the conclusion that the form of the fully developed nerve-cell is not fixed and permanent. He has succeeded in transplanting the sympathetic and plexiform ganglions of various animals on to other tissues and organs of the same animals (or, in some cases, other animals of the same species and same age), and has studied the subsequent morphological changes at varying intervals—a few hours up to twenty-three days.

It is impossible in an abstract to give a full account of the author's histological findings, for these vary considerably in detail according to the animal, the site of grafting, and the time allowed to elapse before the graft is removed for examination. Suffice it to say, that various alterations were observed in the internal structure of the cell and in its external morphology. New processes of various forms were seen to spring out from the cell-body. These differed greatly in appearance from the normal processes, and were sometimes very numerous. The alterations observed could not be regarded simply as phenomena of collateral regeneration. The mechanism seemed to be more complex, and approached more closely to that occurring in the embryo. It is not a matter of indifference on to which organ or tissue the ganglion is transplanted, for the nutritive environment exercises an influence of the greatest importance on the external morphology and intimate structure of the nerve-cells. The normal life and morphology of the nerve-cell is conditioned by a sort of more or less stable equilibrium between its protoplasm and the liquid with which it is bathed. If the composition of the surrounding medium becomes altered, the cell reacts by morphological changes, the intensity of which varies with the intensity of the irritant agent. It would seem that the spinal ganglion cells possess a great plastic activity, brought into play by irritant agents. It might be said that certain disorders of nutrition put the cytoplasm into a particular state of irritability, permitting the cell to react by variable plastic formations. Nageotta supports Marinesco in this view.

In discussing the nature of the immediate mechanism of these morphological phenomena, Marinesco states that the two essential factors are the surface tension and the osmotic pressure. While Nageotta gives more importance to the latter factor, Marinesco's investigations lead him to conclude that it is not to the modifications occurring in the cell-interior (increase of osmotic pressure, desiccation, lying in a solution of hypertrophic serum) that we must relate the formation of new processes, but to the modifications in the surface tension, and the attraction exercised by certain chemiotaxic substances.—J. H. MACDONALD.

The Influence of the Cortical Centres on the Phenomena of Generation and Perpetuation of the Species. By Dr. Carlo Ceni (*Riv. Sper. di Freniat.*, vol. xxxiii, fasc. ii and iii).—Ceni, continuing his researches upon heredity, has carried out a series of experiments upon fowls. He concludes that (at least in the case of fowls) a surprising and direct influence is exercised by the cortical centres of the procreators on their faculty of generation. A lesion of those centres is followed by a degree of sterility, proportioned to the extent of the lesion, and this independently of the sexual instinct and the faculty of fulfilling the act of fecundation, which may remain conserved. Further, he holds it to be demonstrated that the cortical centres exercise a direct influence on the whole complexus of the more obscure functional and dynamic processes of the organs of reproduction, which manifest themselves through the fundamental biological law of perpetuation of the species. It is clearly evident that cortical lesions, even partial, render the procreators unfit for the reproduction of their fellow-beings in normal conditions.

The functional disturbances of the organs of reproduction, due to cerebral lesions, have a *progressive* character, especially in the male. In fact, a cock, only partially decorticated, presents, after a period of sexual activity varying from one to about two years, grave phenomena of sexual exhaustion, and dies in a few weeks in a state of profound marasmus, characterised especially by an enormous atrophy of its sexual organs.—J. H. MACDONALD.

DENTAL SCIENCE.

Oral Sepsis in the Services. By Major P. J. Probyn, D.S.O., R.A.M.C. (read in the Navy, Army, and Ambulance Section at the annual meeting of the British Medical Association).—Major Probyn discusses the subject under the heads of (1) the recruit, (2) the trained man, and (3) general effects of oral sepsis.

He comments on the great amount of material lost to the service from defective teeth in otherwise healthy youths, who, if fitted with artificial dentures, might still become useful fighting men. Recruiting officers may now use their discretion in admitting men with artificial dentures, and the author condemns the recommendation in the report of the Army Medical Department for 1906, allowing recruits to be taken who have stumps in their jaws.

Oral sepsis is even more important in relation to the trained man, upon whom the country's money has already been expended.

He refers to the work of Dr. W. Hunter on *Oral Sepsis in its Relation to Blood Diseases.* He lays stress upon the affection of the soft tissues rather than upon the actual necrosis of the teeth. Bad taste in the mouth in the morning, welling up of pus between the teeth and gums, tenderness during mastication, loosening of the teeth, are local symptoms, while sore throat, dyspepsia, and diarrhœa may follow.

He also refers to the works of Miller and Goadby on the bacteriological condition of the mouth, pointing out that staphylococci and streptococci both exist normally in the mouth, and attention must be directed to inhibiting the growth of these germs in dealing with oral sepsis. He considers the periodontal membrane to be the seat of attack, and deprecates the too free use of stout bristled toothbrushes or of toothpicks, which may injure the delicate membrane. Other organisms, such as those of cholera, typhoid, tuberculosis, pneumonia, and diphtheria, may be present in the mouth without producing disease, but in the presence of oral sepsis these may enter the system and produce their characteristic results. He traces gastritis, enteritis, appendicitis, colitis, proctitis, diseases of bile and pancreatic ducts, middle-ear and antrum of Highmore suppuration, and even pulmonary diseases, to oral sepsis.

Discussing the theories of the more frequent occurrence of this condition now than formerly, he cites the views of Cantlie that it dates back to babyhood, being associated with more frequent bottle-feeding and inconstant temperature of the milk. Other possible explanations are the more general use of milk and its frequent contamination with pathogenic organisms, while still another theory is that the food used is different from what it was fifty years ago.

Osteomyelitis, epiphysitis, sprue, and scurvy are all traced to the condition of the buccal cavity. Since teeth and hair are closely allied embryologically, premature loss of hair and blanching of same are traced to a similar cause.

Treatment consists in scrupulous cleansing of the mouth, removal of unsavable stumps, and filling of all savable ones. Constitutional methods should also be adopted, while vaccine treatment, with scraping of the roots of affected teeth, as advocated by W. Kenneth Goadby, is recommended.

—J. Forbes Webster.

Books, Pamphlets, &c., Received.

Diseases of the Eye, by M. Stephen Mayou, F.R.C.S. With 119 original illustrations and 8 coloured plates. London: Henry Frowde and Hodder & Stoughton. 1908.

The Cure of Rupture by Paraffin Injections, by Charles C. Miller, M.D. Chicago: Oak Printing Co. 1908. (1 dol.)

A Text-book of General Pathology, for the use of Students and Practitioners, by J. Martin Beattie, M.A.(N.Z.), M.D. Edin., and W. E. Carnegie Dickson, M.D., B.Sc., F.R C.P.Edin. With 162 illustrations and 4 coloured plates. London: Rebman Limited. 1908. (17s. 6d. net.)

The Nature of Enzyme Action, by W. M. Bayliss, D.Sc., F.R.S. London: Longmans, Green & Co. 1908. (3s. net.)

Report of the Medical Officer of Health of the City of Glasgow, 1907. Glasgow: Robert Anderson. 1908.

Diseases of the Heart, by James Mackenzie, M.D., M.R.C.P. London: Henry Frowde and Hodder & Stoughton. 1908. (25s. net.)

The Rectum, its Diseases and Developmental Defects, by Sir Charles B. Ball, M.Ch., F.R.C.S.I., Hon.F.R.C.S.Eng. London: Henry Frowde and Hodder & Stoughton. 1908. (30s. net.)

Vaccine Therapy and the Opsonic Method of Treatment, a short Compendium for General Practitioners, Students, and others, by R. W. Allen, M.D., B.S.Lond. Second edition. London: H. K. Lewis. 1908. (7s. 6d. net.)

The Transactions of the Edinburgh Obstetrical Society. Vol. XXXIII (Session 1907-1908). Edinburgh: Oliver & Boyd. 1908.

Diseases of the Skin, an Outline of the Principles and Practice of Dermatology, by Sir Malcolm Morris, K.C.V.O. New and enlarged edition. With 10 coloured and 47 black-and-white plates and illustrations in the text. London: Cassell & Co., Limited. 1908. (10s. 6d.)

A Manual of Infectious Diseases, by E. W. Goodall, M.D.Lond., and J. W. Washbourn, C.M.G., M D. Lond., F.R.C.P. Second edition, revised and enlarged. London: H. K. Lewis. 1908. (14s. net.)

Anatomie und Mechanismus der Skoliose, von weil. Dr. Carl Nicoladoni. Mit 54 Figuren auf 37 Tafeln und dem Portrait des Verfassers. Berlin: Urban & Schwarzenberg. 1909. (Mks. 9.)

Physiological Principles in Treatment, by W. Langdon Brown, M.D.Cantab., F.R.C.P. London: Baillière, Tindall & Cox. 1908. (5s. net.)

A System of Medicine by Many Writers, edited by Sir Clifford Allbutt, K.C.B., M.A., M.D., LL.D., and Humphry Davy Rolleston, M.A., M.D., F.R.C.P. Vol. IV, Part II. London: Macmillan & Co. 1908. (25s. net.)

A System of Diet and Dietetics, edited by G. A. Sutherland, M.D., F.R.C.P. London: Henry Frowde and Hodder & Stoughton. 1908. (30s. net.)

A Text-book of Operative Surgery, covering the Surgical Anatomy and Operative Technic involved in the operations of General Surgery, by Warren Stone Bickham, M.D., Pharm.M. Third edition, greatly enlarged, containing 854 illustrations. London: W. B. Saunders Company. 1908. (28s. net.)

Physiology and Pathology of the Urine, with Methods for its Examination, by J. Dixon Mann, M.D., F.R.C.P. With illustrations. Second edition, revised and enlarged. London: Charles Griffin & Co., Limited. 1908. (10s. 6d. net.)

A System of Syphilis, in six volumes, edited by D'Arcy Power, M.B.Oxon., F.R.C.S., and J. Keogh Murphy, M.D., M.C. Cantab., F.R C.S. With an Introduction by Jonathan Hutchinson, F.R.S. Vol. I: Introduction by Jonathan Hutchinson, F.R.S.; History, by Iwan Bloch, M.D.; Microbiology, by Professor Elie Metchnikoff; General Pathology, by F. W. Andrewes, M.D. Oxon., F.R.C.P.; Early Manifestations (Male), by Colonel F. J. Lambkin, R.A.M.C.; Early Manifestations (Female), by A. Shillitoe, F.R.C.S.; Congenital Syphilis, by G. F. Still, M.D., F.R.C.P. Vol. II: The Surgery of Syphilis, by D'Arcy Power, F.R.C.S.; The Treatment of Syphilis, by Colonel F. J. Lambkin, R.A.M.C.; An Outbreak of Syphilis in a Virgin Soil, bv Colonel F. J. Lambkin, R.A.M.C. (Notes on Syphilis in the Uganda Protectorate); Syphilis in Obstetrics, by William J. Gow, M.D., F.R.C.P. London: Henry Frowde and Hodder & Stoughton. 1908. (£2, 2s. net.)

Operations on the Ear (the Operations for Suppurative Otitis Media and its Intracranial Complications), by H. Heine; translated from the second German edition by W. Lombard Murphy, M.A., M.B., B.C.Cantab., F.R.C.S.I. London: Baillière, Tindall & Cox. 1908. (8s. 6d. net.)

Handbook for Attendants on the Insane. Fifth edition, revised and enlarged. Published by the authority of the Medico-Psychological Association. London: Baillière, Tindall & Cox. 1908. (2s. 6d. net.)

The Future of Medicine, by Sidney W. MacIlwaine, M.R.C.S., L.R.C.P. London: P. S. King & Co. 1908. (1s. net.)

Transactions of the Thirtieth Annual Meeting of the American Laryngological Association held at Montreal, Canada, May, 1908. New York: The M'Connell Printing Co. 1908.

The Diagnosis of Smallpox, by T. F. Ricketts, M.D., B.Sc.Lond., M.R.C.P., D.P.H.; illustrated by photographs by J. B. Byles, M.B., B.C.Cantab., F.R.C.S.Eng., D.P.H. With 12 coloured plates, 110 black-and-white plates, and 14 charts. London: Cassell & Co., Ltd. 1908. (21s. net.)

GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR THE FIVE WEEKS ENDING 21ST NOVEMBER, 1908.

	WEEK ENDING				
	Oct. 24.	Oct. 31.	Nov. 7.	Nov. 14.	Nov. 21.
Mean temperature, . .	48·0°	48·1°	47·0°	41·3°	44·8°
Mean range of temperature between day and night, .	27·1°	36·9°	23·7°	30·7°	20·6°
Number of days on which rain fell, ...	3	3	1	4	7
Amount of rainfall, . ins.	0·66	0·26	0·03	0·52	0·57
Deaths registered, ...	237	276	268	315	305
Death-rates, ...	14·4	16·8	16·3	19·1	18·5
Zymotic death-rates, . .	0·4	0·5	0·6	0·8	0·9
Pulmonary death-rates, .	1·9	2·3	2·5	3·2	2·7
DEATHS—					
Under 1 year, . . .	61	59	57	72	48
60 years and upwards, .	59	61	50	67	91
DEATHS FROM—					
Small-pox, ...	...	...	...	...	...
Measles, ...	1	...	...	...	1
Scarlet fever, . . .	2	1	1	4	5
Diphtheria, . . .	3	6	7	4	6
Whooping-cough, . .	6	10	5	13	12
{ Fever, ...	...	1	4	6	4
{ Cerebro-spinal fever, . .	...	3	2	1	1
Diarrhœa, ...	17	17	12	12	10
Croup and laryngitis, .	1	1	...	...	1
Bronchitis, pneumonia, and pleurisy, ...	39	43	64	80	73
CASES REPORTED—					
Small-pox, ...	...	...	...	...	...
Cerebro-spinal meningitis, .	2	7	1	3	2
Diphtheria and membranous croup, ...	28	46	45	64	46
Erysipelas, . . .	19	16	11	12	25
Scarlet fever, ...	66	78	80	95	75
Typhus fever, ...	...	...	...	...	...
Enteric fever, ...	26	27	29	13	9
Continued fever, . . .	...	2	...	...	...
Puerperal fever, . . .	3	1	2	1	2
Measles,*	9	15	20	15	21

* Measles not notifiable.

SANITARY CHAMBERS,
GLASGOW, *26th November, 1908.*

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